CHAPTER 9. RECOMMENDED ACTIONS

9.1 RECOMMENDED ACTIONS

9.1.1 Project Selection

A list of 29 recommended actions including capital improvement projects (CIP), right-of-way acquisition, studies, and programs were developed from the recommendations on geomorphology, water quality, stream habitat, and drainage. Some of the more extensive habitat recommendations were split into multiple improvement projects such as 4A, 4B, and 4C. Detail project sheets were prepared for 10 early action projects and are contained in Appendix A. The recommended capital improvement projects are described in Table 9-1 and shown on Figure 9-1.

9.1.2 Project General Information

The project name, problem addressed, description, justification, and location is described in Table 9-1. Photographs and sketches for the 10 early action projects are contained in Appendix A.

9.1.3 Project Ranking

The projects were ranked by King County staff based on the criteria shown in Figure 9-2. The projects were ranked as high, medium, or low. The ranking criteria consisted of 1) Ecological Significance which assessed what and how important is the identified ecological feature and processes, 2) Hazard to Life, Limb, and Property which assessed the significance of the hazard and its urgency, and 3) Project Efficacy which assesses what is the likely-hood of project success and implementation. The ranking of these projects, based on the criteria worksheets, is shown on Table 9-2. The criteria ranking sheets were prepared for each of the projects and are attached at the end of this Chapter.

9.1.4 Cost Estimating

Detail project costs estimates were prepared for 10 early actions and those estimates are contained in Appendix A. The estimated costs included in the project sheets are based on 2002 dollars. The remainder of the action items were estimated by professional judgment as less than \$75,000, \$75,000-\$250,000, and greater than \$250,000 as shown in Table 9-1 and the individual ranking sheets.

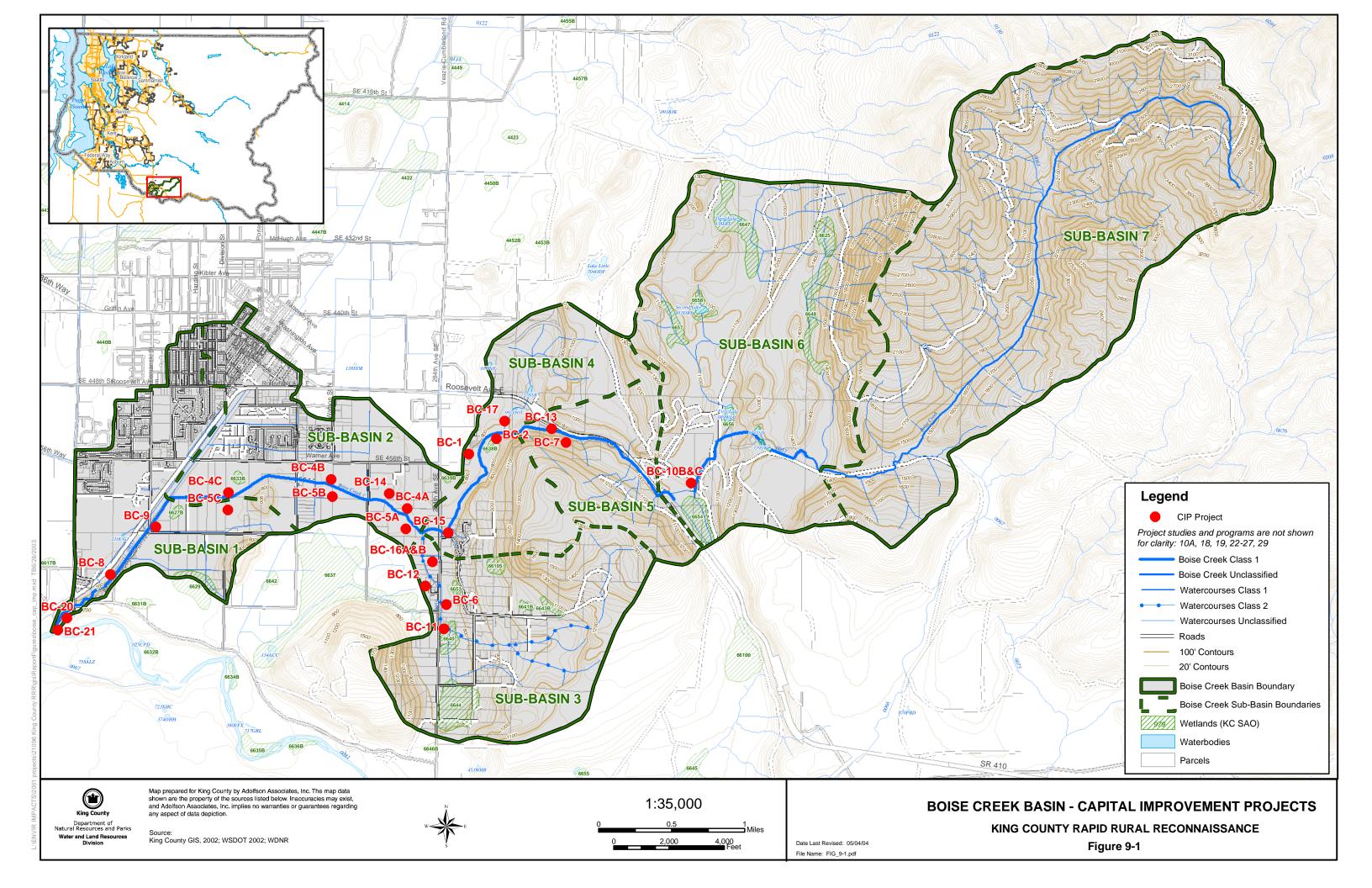
Project Number	Rank	Name	Problem Addressed: Category, Description and Source	Project Description	Justification/Benefit	Comments	Location	Estimated Cost (\$1,000)
BC-1	Low	Boise Creek Golf	Habitat—The stream corridor through the Enumclaw Golf Course is mostly barren with little or no stream side vegetation to provide shade, cover, or food for fish. This reach of Boise Creek is the prime fish spawning area for Boise Creek. (Sources: County Drainage Complaint Log, Complaint No. 01E; County CIP).	Plant riparian vegetation along several high priority reaches. These reaches are shown in King County's Enundaw Golf Course Riparian Restoration Study.	This is the best spawning area on Boise Creek. The habitat can be improved by riparian plantings along much of this reach. Increase rearing habitat, decrease water temperature.		E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 838-G1)	\$168
BC-2	High	Boise Creek Golf Course Channel Relocation	Habitat, Floodplain/Channel processes —The stream corridor through the Enumclaw Golf Course is mostly barren with little or no stream side vegetation to provide shade, cover, or food for fish. There is also no buffer along some of the golf fairways. Floodplain processes and functions are very limited. The golf course floods and sediment is routed to the fairways during flood events (Source: County CIP).	This project would relocate approximately 1,500 feet of Boise Creek. It also address right bank tributray – see BC17. The channel Will be relocated into an old stream channel. Placement of LWD in the channel, additional riparian planting, and a 100-foot buffer strip on both sides of the channel are planned. A grant has been approved to design and possibly construct this project, and conceptual design were put together in 2003 to obtain money for design and construction.	This project would restore channel conditions and floodplain processes and functions, restore riparian conditions to improve habitat and to increase the degree of buffering afforded the stream from adjacent land uses, improve water quality, restore sediment routing to a regime more closely approximating predevelopment conditions and increase public support and awareness of salmon recovery and watershed stewardship. Enhance approximately 1,500 feet of high priority channel. Increase rearing habitat decrease water temperature.	See King County's Scope of Services for the Boise Creek Relocation project. Refer to the WRIA 10 SRFB grant called "Boise Creek Restoration on the Enumclaw Golf Course." Construction plans and specifications need to be developed for this recommended project. The golf course will transfer to the City of Enumclaw	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 838-G1)	\$1,360
BC-4A		- Riparian Habitat, channel and floodplain	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe).	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Reach A is the highest priority and is from 276th Ave SE to 254th Ave SE; (RM 2.7 – 3.3) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding.	Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer.	RM 2.7 – 3.3	\$207
BC-4B		- Riparian Habitat, channel and floodplain	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Baisn Steward; Habitat Assessment; Puyallup Tribe)	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Reach B is the second highest priority and is from 276th Ave SE to 268th Ave SE (RM 2.7 – 2.2) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding.	Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer.	276th Ave SE to 268th Ave SE; (RM 2.7 – 2.2)	\$191
BC-4C	High	- Riparian Habitat,	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and ripartian habitat degradation by agriculture and grazing land-use practices is a widespread habitatin pairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Reach C is the third highest priority and is from 252nd Ave SE to 268th Ave SE; (RM 2.2 – 1.2) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding.	Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer.	252nd Ave SE to 268th Ave SE; (RM 2.2 – 1.2)	\$327
BC-5A	High	Boise Creek acquisitions between RM 2.7 and 3.3. for riparian and floodplain corridor restoration.	Habitat, channel/floodplain processes—The creek has been channelized and disconnected from the flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources: Baisn Steward; Habitat Assessment; Puyallup Tribe).	Acquire land and/or easements adjacent to the creek, to restore natural channel function and flood plain functions, and construct an off-channel pond or side channel to improve channel habitat, rearing, and refuge during high creek flows. Reach A is the highest priority and is from 276th Ave SE to 284th Ave SE; (RM 2.7 – 3.3).	Restores ecosystem functions and agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding.	Spawning and limited rearing currently exists in this reach. The land cost could be high since most of the land is currently being used for agriculture. Acquisitions would occur as opportunities arise.		\$217

Project Number	Rank	Name	Problem Addressed: Category, Description and Source	Project Description	Justification/Benefit	Comments	Location	Estimated Cost (\$1,000)
BC-5B	High	Boise Creek acquisitions to restore ecosystem functions.	Habitat, channel/floodplain processes—The creek has been channelized and disconnected from the flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources: Baisn Steward; Habitat Assessment; Puyallup Tribe).	Acquire land and/or easements, adjacent to the creek, to restore natural channel function and flood plain functions, and construct an off-channel pond or side channel to improve channel habitat, rearing, and refuge during high creek flows. Acquisitions would occur as opportunities arise. Reach B is from 276th Ave SE to 268th Ave SE.		Spawning and limited rearing currently exists in this reach. The land cost could be high since most of the land is currently being used for agriculture Acquisitions would occur as opportunities arise.	Sec25, T20N, R6E (2000 Thomas Bros. Map pg. 838-D1-G1) At select locations between river mile 1.3 to 3.2 (Beaver Creek confluence)	\$217
BC-5C	High	Boise Creek acquisitions to restore ecosystem functions.	Habitat, channel/floodplain processes— The creek has been channelized and disconnected from the flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly vold of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe).	Acquire land and/or easements, adjacent to the creek, to restore natural channel function and flood plain functions, and construct an off-channel pond or side channel to improve channel habitat, rearing, and refuge during high creek flows. Reach C is from 268th Ave SE to 252nd Ave SE. Acquisitions would occur as opportunities arise.	Restores ecosystem functions and agricultural drainage. e.g. improve the fish habitat, water quality and reduce flooding.	Spawning and limited rearing currently exists in this reach. The land cost could be high since most of the land is currently being used for agriculture Acquisitions would occur as opportunities arise.	Sec25, T20N, R6E (2000 Thomas Bros. Map pg. 838-D1-G1) At select locations between river mile 1.3 to 3.2 (Beaver Creek confluence).	\$217
BC-6	Medium	Beaver Creek Channel Relocation	Habitat—Approximately 1,400 feet of Beaver Creek is located adjacent to 284th Ave SE. There is no riparian vegetation or LWD along most of this reach and the existing channel is in poor condition. (Source: Habitat Assessment).	The proposed project is to relocate approximately 600 to 1400 feet of channel away from 284th Ave SE and establish at least a 50 ft riparian buffer on both sides of the creek. LWD placement is also planned in this reach.	Improves fish habitat and water quality, especially	See Boise Creek HSPF hydrologic model for stream flows. Right-of-way acquisition could be a problem since the channel relocation is on private property and currently used as pasture. Feasibility may be limited by existing infrastructure and land use constraints.	1,400 feet of Beaver Creek adjacent to 284th Ave SE	\$339
BC-7	High	Boise Creek LWD Complex Placement RM 4.9 - 5.4	Erosion, Channel processes/function, Habitat— The Boise Creek Channel adjacent to Highway 410 near the Weyerhaeuser Mill has been a continuing source of sediment, particularly through the Enumclaw Golf Course. The channel capacity through the golf course has continued to be lessened through the years. Most of the sediment that settles in the golf course is good quality gravel. Finer material settles out in the lower reaches of channel particularly between 288th Ave SE and 252nd Ave SE. (Source: Personal Knowledge) Restore channel and habitat diversity by adding LWD.	There are numerous channel erosion areas along this reach. Several debris dams and LWD could be constructed in this reach to reduce the volume of downstream sedimentation, and increase channel and habitat complexity.	Reducing the amount of downstream sedimentation will help improve the habitat value of the Boise Creek channel downstream of 284th Ave SE and reduce the flooding problems on the golf course including the proposed relocated channel (BC-2), Increases the hydraulic complexity, sediment trapping, and overhead cover – in the placement reach – it should increase habitat complexity.	This reach needs to be walked to determine the best locations to place these improvements. Consider complex log jams and LWD seeding, (expect mobile wood.)	NW1/4, S29, T20N, R7E (2000 Thomas Bros. Map pg. 808-J7	\$386
BC-8	Low	Boise Creek Stream Home Relocation; Near RM 0.4	Erosion—Property owners complained to King County about stream bank erosion behind their home. The top of the creek bank is approximately 30 feet from their home. The stream bank is very steep, approximately 1/2 horizontal to 1 vertical or steeper and about 30-feet high, (Source: County Drainage Complaint Log, Complaint No. 50E).		Stope stability; address complaint filed about possible slope failure (complaint 1996-0636).	A geotechnical analysis is required to confirm the risk of further bank failure and possible methods to stabilize the slope. This is a private problem, level of risk is unknown.	Near 46925 248th Ave SE; E1/2, S35, T20N, R6E (2000 Thomas Bros. Map pg. 838-C2).	\$218
BC-9	Low	Boise Creek Stream Bank Stabilization; Near RM 1.1	Erosion—The left stream bank immediately upstream of SE 252nd is sloughing in the creek. The channel side slope is approximately 1H:1V and the bank height is approximately 15 feet. (Source: Field Reconnaissance).	The channel side slope should be flattened to 2H:1V and stabilized using bioengineering methods.		Due location of current structure, there is no practical engineering solution to this issue. Consider acquistion opportunities of this site. See project recommendation BC-21.	S1/2, S26, T20N, R6E (2000 Thomas Bros. Map pg. 838-C1).	\$362

Project Number	Rank	Name	Problem Addressed: Category, Description and Source	Project Description	Justification/Benefit	Comments	Location	Estimated Cost (\$1,000)
BC-10A	High	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 ((Feasibility Component)	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert. (Sources: Basin Steward; Habitat Assessment).	There may be an opportunity to acquire some property when the Mill site is cleared. A feasibility study should be done to look at ways to enhance the habitat in this reach and preserve the stormwater detention capacity of the channel surrounding the old Mill pond. Restore historic wetland complex at site. This would include the daylighting of the stream.	Improve and protect habitat and stormwater detention storage.	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage heads (needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put it on the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur.	Weyerhaeuser Mill plant and operating area. S28,T20N,R7E (2000 Thomas Bros. Map pg. 839-B1).	\$50
BC-10B	High	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Aquistion Component)	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert. (Sources: Basin Steward; Habitat Assessment)	This proposal would aquire some property on the mill site. If aquired restoration of this area could be investigated.	Improve and protect habitat and stormwater detention storage.	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage. Needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DDESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put it on the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur.	Weyerhaeuser Mill plant and operating area. S28,T20N,R7E (2000 Thomas Bros. Map pg. 839-B1).	easement >\$100 acquistion >\$500
BC-10C	High	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Capitol Component)	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert. (Sources: Basin Steward; Habitat Assessment).	Enhance the habitat in this reach and preserve the stormwater detention capacity of the channel surrounding the old Mill pond. Restore historic wetland complex at site. This would include the daylighting of the stream.	Improve and protect habitat and stormwater detention storage.	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage. Needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DDESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put to not the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur. NOTE: See criteria write-up sheet for more information.	Weyerhaeuser Mill plant and operating area. \$28,T20N,R7E (2000 Thomas Bros. Map pg. 839-B1)	>\$500
BC-11	Medium	Beaver Creek Revegetation	Habitat—The stream corridor, immediately upstream of 284th Ave SE, has been greatly disturbed and there is livestock access to the stream. (Source: Habitat Assessment).	Restore the Beaver Creek channel immediately upstream of 284th Ave SE and plant riparian vegetation along Beaver Creek.	Currently the channel is in poor habitat condition due to bank trampling and unrestricted livestock access.	Possible enforcement action to require property owner to restore channel and prevent livestock access to stream. Property owners need to comply with Livestock ordinance. Property is currently for sale.	S1/2, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	< \$75
BC-12	Low	Flooding near 46905 283rd Ave SE	Flooding—Drainage from a shallow ditch appears to have been blocked. Drainage overflows the ditch and flows across 283rd Ave SE before flowing into Beaver Creek. (Source: County Drainage Complaint Log, Complaint No. 1997-1162).	Construct a catch basin along 283rd to collect the flood flow and use a combination of pipe and channel to better convey the flows to Beaver Creek.	Reduce flooding of 283rd Ave SE and minor flooding to private property.	Refer to NDAP.	SE 469th Street and 283rd Ave SE NW1/4,S31,T20N,R7E (2000 Thomas Bros. Map pg. 838-G2).	<\$75
BC-13	High	Subbasin 5 Riparian Under Story Conifer Plantings	Habitat—Currently there are mostly deciduous trees along this reach of Boise Creek. Planting conifer trees in this area would improve the riparian habitat. (Sources: Basin Steward; Habitat Assessment).	Use volunteers or County forces to plant this area.	Improve riparian habitat, and provides long term recruitment of coniferous trees into creek.	No right-of-way problems are anticipated. Could be done programmatically. Refer project to SHRP.	Between the Boise Creek crossing of SR 410 near the Weyerhaeuser Mill to the Boise Creek waterfall near the Enumclaw GC. 529,T20N,R7E (2000 Thomas Bros. Map pg. 808-J7) river mile 4.3 to 5.5.	<\$ 75

Project Number	Rank	Name	Problem Addressed: Category, Description and Source	Project Description	Justification/Benefit	Comments	Location	Estimated Cost (\$1,000)
BC-14	Low	Overbank Flooding of Boise Creek between 280th Ave. SE and 260th Ave. SE	Flooding—Drainage District #6 Chairman said Boise Creek overtops its creek banks east of 276th Ave SE and flows overland before entering the creek again near 260th Ave SE. (Sources: Drainage District No. 6; HSPF Modeling).	Construct setback berms along the low creek banks to provide additional channel capacity.	Reduce flooding of farm land and some homes during major flood events.	As written the project deals strictly with the flooding issue and it does not address the ecological processes. If the project is combined with BC4 and BC5 (acquire easement, restore natural channel and floodplain processes, and add LWD and restore riparian vegetation) this project could reduce flooding and restore significant ecological processes. If the comprehensive approach is taken, this project could provide significant rearing habitat for coho and chinook.	Low bank areas along Boise Creek between 280th Ave SE and 260th Ave SE. S25,T20N,R6E & S39,T20N,R7E (2000 Thomas Bros. Map pg. 838-D1-G1).	>\$250
BC-15	Medium	Boise Creek and 284th Ave SE Riparian Habitat Improvement	Habitat—both banks have been cleared of vegetation, armored with riprap and replanted with ornamental cultivars. The banks over stepend and currently unstable.	Reslope the banks to a more stable slope angle and install LWD and replant with native vegetation. Create a more natural channel form, especially on the inside bend. (Source: Habitat Assessment).	This is a valuable reach of habitat spawning and adding vegetation would provide protect to the fish and improve their habitat.	The site is on a residential lot close to a single family dwelling unit. This structure may be in the floodplain and the possibility of a buyout may be considered. The current amoring and ornamental vegetation was a response to the 1996 flood. The landowner may not be willing to modify the channel untill flood damage occurs again.	Located immediately upstream of the Boise Creek crossing of 284th Ave SE. S1/2,S30,T20N,R7E (2000 Thomas Bros. Map pg. 838- G2).	>\$250
BC-16A	High	Beaver Creek Acquisition and/or easement, and restoration. (Acquisition Component)	Habitat—The stream corridor from the confluence of Boise Creek and Beaver Creek to 288th Ave SE is mostly devoid of any stream side vegetation and is covered with a lot of reed-canary grass.(Source: Habitat Assessment).	Aquire property or easements where there is property owner willingness, in order to implement restoration actions identified in BC-16B.	Improve riparian habitat.	Right-of-way acquisition is needed. Also, this section of Beaver Creek is located within DD #6. Need to work with drainage district 6.	NW1/4, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	<\$ 500
BC-16B	High	Beaver Creek Acquisition and/or easement, and restoration.(Restorati on Component)	Habitat—The stream corridor from the confluence of Boise Creek and Beaver Creek to 288th Ave SE is mostly devoid of any stream side vegetation and is covered with a lot of reed-canary grass.(Source: Habitat Assessment).	Relocate Beaver Creek outside of road ROW.	Improve riparian habitat.	Right-of-way acquisition is needed. Also, this section of Beaver Creek is located within DD #6. Need to work with drainage district 6.	NW1/4, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	<\$ 500
BC-17	Medium	Golf Course Tributary Improve Fish Passage	Habitat—The culvert that conveys this right bank tributary (Proposed to be named #10.0058) into Boise Creek within the golf course is partially plugged and restricts fish passage. This culvert is thought to have an adverse grade. (Source: Habitat Assessment).	Replace the existing culvert with an open channel.	Improve fish passage.	There is limited fish habitat upstream of this culvert. BC2 will resolve this issue if implemented. There is a water quality problem upstream due to heavy sedimentation. Drainage services has identified the source of upstream water quality problems to a WSDOT waste site. The extent of other fish passage blockages upstream from the golf course needs to investigated. There may be an opportunity to daylight this tributay to the wetland on the North side of HWY 410.	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 808-H7).	>\$200
BC-18	High	Historic Channel Mapping	Lack of historic channel information.	Map historic channel alignment throughout the watershed, including wetlands, overflow channel, and any pertinant hydrolic features.	Understanding the natural history of Boise Creek.	Use GLO land surveys, other archival sources. Corrdinate with WLRD and UW staff with expertise in this area. (Karen Bergeron, Katie Gellnbeck; Brian Collins and Amir Sheikh at UW.)	Entire watershed.	<\$20
BC-19	High	Flood Calibration	Habitat, floodplain/channel processesBoise Creek has been channelized & constrained by the agricultural community over many decades. Flood calibration would help determine where flooding occurs.	Set up contract with helicopter to take pictures when the Creek floods. Set up a team in advance to take ground photos, and mark locations. A 2-year event will trigger this action.	To monitor and model, to see flooding on the ground, get sense of historic channels.	Place under other programmatic recommendations in the report.	Entire Boise Creek.	<\$20
BC-20	High	Boise Creek Mouth Relocation	Habitat, floodplain/channel processes - Straightened stream channel, no rearing or spawning habitat. Decrease water velocities, improve natural channel function.	Boise Creek mouth relocation (below Mud Mountain Rd crossing, downstream 500 ft -USGS aged down to the mouth). Increase stream length (possibly add 1000 + feet). Oversteep, straight, no spawning or rearing, just transport. Provide refuge area from White. There's aiready County investment in property and potential partnering (TPU). County owns both sides of Boise Creek. Offer cold water refuge for White.	High priority from WRIA 10 EDT report. Create 1500 feet of spawning/rearing habitat. Remove dike and make more natural.	Do not relocate mouth to be too close to Enumclaw sewer outfall (or downstream side of 410 bridge). Needs feasibility for SRFB, detailed design, and construction.	Mouth upstream approx. 500 ft to USGS gage. RM 0 to RM 0.1	>\$750
BC-21	Medium	Acquistion & LWD placement within reach of Boise Creek that traverses the mudflow cut	Habitat, Channel processes/functions—The channel within this reach is undergoing ongoing erosion problems where the stream has been relocated several decades ago into a steep-walled ravine where it is actively incising through mul flow deposits where the channel descends from the plateau down to the White River. The ripartan habitat within this reach is in relatively good condition due to an abundance of mature trees adjacent to the channel. Instream habitat is in poor condition, however, because of lack of LVD, overhanging cover, lack of hydraulic diversity, and high energy flows.	Addition of LWD will help stabilize the channel, and reduce erosion. It will also increase instream habitat complexity and hydraulic refugia for salmonids. This project includes systematic consideration of acquisition opportunities; addition of LWD pieces and/or log jams to trap sediment and decrease velocities in locations where they will not pose risk to adjacent properties and infrastructure.	Reduce energy of flows; improve salmonid spawning and rearing habitat and and restore natural channel functions. Addition of LIVO will increase local deposition of gravels, reduce the sediment transport rate.	Some of the corridor along the right bank is already in public ownership in the form of a "rails-to-trails" corridor, and there is one good access point on a public right-of-way currently occupied by a sturdy, but no longer actively used bridge. Needs scoping for feasibility, and ongoing consideration of acquisition opportunities as they arise.	RM 0.1 to RM 1.1.	< \$100

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BC-22	High	Agriculture & Stewardship Coordination	Program coordination and reduce conflict with agricultural program and habitat programs.	Program recommendation - connect with APD and FPD program to get list of problem areas and priorities. Identify what lands can be used for farming, which for ecological restoration. Basin wide acquisition/ land trade strategy for stream restoration and farming.		Place under other programmatic recommendations in the report.	Basin wide	Staff Time
BC-23	High	Channel Relocation Around Water Fall Fish Passage Barrier.	Blocks anadromous fish usage of upper basin.	This is a feasibility analysis to determine if any potential exsist for rerouting the stream around the exsisting impassable waterfall. Based on historical fish access.	Makes accessible approximately1.5 miles of high quality anadromous fish habitat in the ravine, south of HWV 410 (up to Mill Pool) increase nutrient base - fish carcasses, and reduces energy in system.	Needs ground truthing by geologist and geomorphologist. In the feasibility study, detailed design, and construction will be evaluated The purpose of this project would be to realign Boise Creek into a corridor within and adjacent to the forest on the south side of SR-410 and route it into the Golf Course north of its current alignment downstream from the waterfall. (bypass waterfall). NOTE: See criteria write-up sheet for more information.	RM 4.3 to 4.6	<\$ 50
BC-24	High	Foothills Rails to Trails Revegetation	Opportunity for public outreach and education; poor water quality.	Coordinate with new entities developing the Enumclaw rails to trails project that parallels SR- 410 within reach RCHRS 100 (Foothils Rails to Trails). This project offers opprotunities to install interpretative signs, enhance the riparian buffer along the right bank of Boise Creek, via invasive weed removal and conifer underplanting. A riparian corridor along a tributary that conveys flows from upstream and within the City of Enumclaw into Boise Creek along SR-410 could also be revegetated.	Water quality and riparian habitat improvement; inform and involve trail users about restoration actions taking place throughout the watershed.	A publically owned abandoned bridge upstream of Mud Mountain Rd would be a good place to post an interpretive sign.	Rails to trails ROW adjacent to SR410 by RM 0.1 to approximately RM 1.1 on the mainstem.	<\$20
BC-26	High	Enumclaw nonpoint public outreach	Unmet need for public outreach and education about nonpoint pollution sources and solutions.	Work with City of Enumclaw and its residents to increase publicawareness of nonpoint pollution; develop citizen-based strategies and projects to reduce nonpoint source pollution. These projects could include revegetation to increase stream shading, workshops on nature-scaping practices, storm-drain stencilling, increasing participation in the Salmon- Watcher Program, etc.	Improve water quality through revegetation and outreach.	Additional reconnaissance should be conducted to determine if salmonids use the unnamed ditched tribributaries in Enumclaw, including SR-410 Creek.	All drainage systems draining from the City of Enumclaw into Boise Creek.	Staff Time
BC-27	High	Upper Boise Creek Habitat Reconnection and Passage Improvements.	This is an opportunity to create resident-fish passage above the mill (logging roads, culverts), and general Instream riparian and wetland habitat improvement, and enhancements.	Need upper habitat reconnaissance and potential enhancement recommendations needs to be developed.	Improved fish passage, and habitat.	Need permission from property owner to recon upper watershed. Recon could identify additional projects. Need to investigate whether there was a historical fish passage barrier or not.	Upstream from Mill Pond	<\$50
BC-29	High	Water quality remediation on trib #10.0058 (Note: Trib number needs to verified / assigned by DNR)	Sediment / silt layeden runoff from unidentified source. (King County drainage investigation has preliminarly lixaced this problem to an anbandoned WSDOT waste site. (Source: Habitat Assessment)	Investigate and improve the water quality in this tributary.	Water quality improvement will improve fish passage and prevent impacts to redds	This project will be done inconjustion with BC-2 and BC-17. Refer to drainage complaint.	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 808-H7)	< \$75



RAPID RURAL RECOMMENDA			* T	ORKSHEET					
GENERAL INFO		ATION	_				_	100000000000000000000000000000000000000	MENDATION ALL SCORE
Recommendation Recommendation Objectives:		s:	_				- 3		/ MED / LOW
PLANNING LE	VEL (CRITERIA							
Ecological Sign	ifican	ice			_			SCORE: H	igh / Med / Low
		(Describe how or who improved.)		n prove cological processes will be		Prote (Describe how or what ecolog protected.)		esses will be	Scale Reach/Site/Watershed
Hydrology Sediment Regime LWD Function Function Floodplain Function Groundwater Rechi Water Quality Riparian Connectivi Fish Migration Anthropogenic Eros Others	arge ity								
Hazard Type List the hazard type, i.g. flooding, landslide, emergency access)	Sa (Dee	afety/Threat scribe who or what trisk if no action is	(Ho resp pre-	Urgency ow quickly do we need to spend to this hazard to went a problem from gro rea and requiring an reasingly costly solution?	o owing ?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazard's associated with County facilities should be a higher priority than sites where no such commitment	Fr (Descri	requency be the frequency the hazard.)	Med / Low Scale Reach/Site/Watershee
Note: Priorities show						exists.) safety. 2. Damage to public i	nfrastruct	ure and developed	public property. 3.
Solution Effica List Recommended Action	Id (What	dentified Problems problems the mendation should be		Does the recommend address the problem		Does the recommendation address the problem source or treat a symptom?		rame for problen mmediate, 1yr, e	
Solution Effica	ісу	Part B	n Re	adiness				SCORE: I	High / Med / Low
What is the longevity recommendation?	of the		study	y, ready for feasibility,	Geogr	are the benefits on a raphic Scale? Reach/Watershed		Cost	

Figure 9-2. Sample Worksheet for Ranking Recommended Capital Improvement Projects

TABLE 9-2 RANKED RECOMMENDED ACTIONS

Project BC#	Rank	Project Name	Project Type	Estimated Cost (\$1,000)
BC-1	L	Boise Creek Golf Course Revegetation	CIP	\$168
BC-2	Н	Boise Creek Golf Course Channel Relocation	CIP	\$1,360
BC-4A	Н	Boise Creek REACH A Riparian Habitat, Channel and Floodplain Restoration	CIP	\$207
BC-4B	Н	Boise Creek REACH B Riparian Habitat, Channel and Floodplain Restoration	CIP	\$191
BC-4C	Н	Boise Creek REACH C Riparian Habitat, Channel and Floodplain Restoration	CIP	\$327
BC-5A	Н	Boise Creek acquisition between RM 2.7 and 3.3 for riparian and floodplain corridor ACQUISITION		\$217
BC-5B	Н	Boise Creek acquisitions to restore ecosystem functions.	ACQUISITION	\$217
BC-5C	Н	Boise Creek acquisitions to restore ecosystem functions.	ACQUISITION	\$217
BC-6	M	Beaver Creek Channel Relocation	CIP	\$339
BC-7	Н	Boise Creek LWD Complex Placement RM 4.9 - 5.4	CIP	\$386
BC-8	L	Boise Creek Stream Home Relocation; Near RM 0.4	ACQUISITION	\$218
BC-9	L	Boise Creek Stream Bank Stabilization; Near RM 1.1	CIP	\$362
BC-10A	Н	Weyerhaeuser Stream Restoration; RM 5.4-6.1 (Feasibility)	STUDY	\$50
BC-10B	Н	Weyerhaeuser Stream Restoration RM 5.4-6.1 (Acquisition)	ACQUISITION	>\$600
BC-10C	Н	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Capitol Component)	CIP	>\$500
BC-11	M	Beaver Creek Revegetation	CIP	<\$75
BC-12	L	Flooding near 46905 283rd Ave SE	CIP	<\$75
BC-13	Н	Subbasin 5 Riparian Under Story Conifer Plantings	CIP	<\$75
BC-14	L	Overbank Flooding between 280th Ave. SE and 260th Ave. SE	CIP	>\$250
BC-15	M	Boise Creek and 284th Ave SE Riparian Habitat Improvement	CIP	>\$250
BC-16A	Н	Beaver Creek Acquisition and/or Easement, and Restoration (Acquisition Component)	ACQUISITION	<\$500
BC-16B	Н	Beaver Creek Acquisition and/or Easement, and Restoration (Restoration Component)	ACQUISITION	<\$500
BC-17	M	Golf Course Tributary Improve Fish Passage	CIP	>\$200
BC-18	Н	Historic Channel Mapping	STUDY	<\$20
BC-19	Н	Flood Calibration	STUDY	<\$20
BC-20	Н	Boise Creek Mouth Relocation	CIP	>\$750
BC-21	M	Acquisition & LWD placement within reach of Boise Creek that traverse the mudflow cut.	CIP	<\$100
BC-22	H	Agriculture & Stewardship Coordination	PROGRAM	Staff Time
BC-23	H	Channel Relocation around Water Fall Fish Passage Barrier	STUDY	<\$50
BC-24	H	Foothills Rails to Trails Revegetation	PROGRAM	<\$20
BC-26	H	Enumclaw Nonpoint Public Outreach	PROGRAM	Staff Time
BC-27	H	Upper Boise Creek Habitat Reconnection and Improvements.	STUDY	<\$50
BC-29	H	Water Quality Remediation on Tributary #10.0058	STUDY	<\$75

 $^{^{*}}$ Projects 1-10 have detail project sheets in Appendix A.

GENERAL INFORMATION

RECOMMENDATION NAME:	Boise Creek Golf Course Revegetation	SCORE	
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat—The stream corridor through the Enumclaw Golf Course is mostly barren with little or no stream side vegetation to provide shade, cover, or food for fish. This reach of Boise Creek is the prime fish spawning area for Boise Creek. (Sources: County Drainage Complaint Log, Complaint No. 01E; County CIP)		
PROJECT	Plant riparian vegetation along several high priority reaches. These reaches are shown in King		
DESCRIPTION:	County's Enumclaw Golf Course Riparian Restoration Study.		
JUSTIFICATION/	This is the best spawning area on Boise Creek. The habitat can be improved by riparian plantings	L	
BENEFIT	along much of this reach. Increase rearing habitat, decrease water temperature.		
COMMENTS:	See King County's Enumclaw Golf Course Revegetation study. Plans need to be developed to show more clearly the locations to be planted and the types of vegetation.		
LOCATION:	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 838-G1)		
ESTIMATED COST:	<\$75K		

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFIC	CANCE	5	SCORE: L
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Minor incremental improvement over time as planting matures.		Minor incremental improvement on site scale.
SEDIMENT REGIME	No Change		
LWD FUNCTION	Will improve recruitment when planting matures.		Reach - Site
CHANNEL FUNCTION	Minor channel function improvement will occur when planting matures.		Reach - Site
FLOODPLAIN FUNCTION	No Change		
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Low to moderate improvement of water temperature and introduction of nutrients and pesticides.		Reach - Site
RIPARIAN	Moderate benefit to riparian connectivity. 2000	A narrow riparian buffer will offer	Site
CONNECTIVITY	ft of riparian replanting.	limited riparian protection.	
FISH MIGRATION	No Change		
ANTHROPOGENIC EROSION	No Change		
OTHERS:	Limited ecological significance, BC-2 will have much more comprehensive ecological significance.		

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	SCORE: N/A		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: M							
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for leastibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost		
Yes	Symptom, because of allowed land-use at the site.	10 year or more due to rate of vegetation growth.	Unknown: Could be permanent if easements are granted.	Need to work out details / easements with City of Enumclaw. Needs design, and landowner willingness.	Reach	<\$75K		

GENERAL INFORMATION

RECOMMENDATION NAME:	Boise Creek Golf Course Channel Relocation	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, Floodplain/Channel processes —The stream corridor through the Enumclaw Golf Course is mostly barren with little or no stream side vegetation to provide shade, cover, or food for fish. There is also no buffer along some of the golf fairways. Floodplain processes and functions are very limited. The golf course floods and sediment is routed to the fairways during flood events.(Source: County CIP)	
PROJECT DESCRIPTION:	This project would relocate approximately 1,500 feet of Boise Creek. It also address right bank tributray – see BC17. The channel will be relocated into an old stream channel. Placement of LWD in the channel, additional riparian planting, and a 100-foot buffer strip on both sides of the channel are planned. A grant has been approved to design and possibly construct this project. and conceptual design were put together in 2003 to obtain money for design and construction	
JUSTIFICATION/ BENEFIT	This project would restore channel conditions and floodplain processes and functions, restore riparian conditions to improve habitat and to increase the degree of buffering afforded the stream from adjacent land uses, improve water quality, restore sediment routing to a regime more closely approximating pre-development conditions and increase public support and awareness of salmon recovery and watershed stewardship. Enhance approximately 1,500 feet of high priority channel. Increase rearing habitat decrease water temperature.	Н
COMMENTS:	See King County's Scope of Services for the Boise Creek Relocation project. Refer to the WRIA 10 SRFB grant called "Boise Creek Restoration on the Enumclaw Golf Course." Construction plans and specifications need to be developed for this recommended project. The golf course will transfer to the City of Enumclaw	
LOCATION: ESTIMATED COST:	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 838-G1) >\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE			
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	Moderate benefit to hydrology.		Site – Reach.	
SEDIMENT REGIME	Moderate to high improvement of sorting of gravel and silt. Improvements to sediment transport.		Site – Reach	
LWD FUNCTION	Significant improvements, project would provide significant placement of LWD in channel and the plantings will significantly improve future LWD recruitment.		Site - Reach	
CHANNEL FUNCTION	Significant improvement, channel would be allowed to migrate within 200 ft buffer.		Site – Reach	
FLOODPLAIN FUNCTION	Significant improvement, project would allow flood plain functions within 200 ft buffer area. Restoration of natural floodplain function.		Site – Reach	
GROUNDWATER RECHARGE	No Change			
WATER QUALITY	Significant improvement immediately and long term incrementally, due to establishing a 100 ft buffer to reconstruct the channel. Temperature, nutrient and reduction of pesticide benefits to be had with this project.		Site – Reach	
RIPARIAN CONNECTIVITY	Significant improvements, project will establish 100 ft riparian buffer and reconnect 1500 ft of riparian buffer.		Site – Reach	
FISH MIGRATION				
ANTHROPOGENIC EROSION				
OTHERS:	Increase buffers will allow significant reduction of fish harassment, by golf course users.		Site – Reach	

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				E: L
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, lyr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom and Source. Addresses the source more significantly with the realignment. Secondarily address the symptoms associated with being near the golf course.	Immediate to long term benefits to be gained as the realign and re- vegetation matures.	Permanent – depending on landowner willingness	Feasibility study is completed, needs funding for detailed design for construction. Permits, Engineering, Coordination with City of Enumclaw.	Site- Reach	>\$500K

GENERAL INFORMATION

RECOMMENDATION NAME:	Boise Creek Riparian Habitat, channel and floodplain restoration	SCORE
RECOMMENDATION PROBLEMS ADDRESSED: PROJECT DESCRIPTION:	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the flood plain, and riparian habitat Degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe) This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Phase A is the highest priority and is from 284th Ave SE to 276th Ave SE; Phase B is from 276th Ave SE to 268th Ave SE, and Phase C is from 268th Ave SE to 252nd Ave SE. The proposed solution is to restore riparian habitat vegetation along the stream banks and place LWD in the channel without reducing the capacity of the stream channel. Increase the flooding capacity by excavating bank channel.	Н
JUSTIFICATION/ BENEFIT	Restores ecosystem functions and agricultural drainage. e.g. improve the fish habitat, water quality and reduce flooding.	
COMMENTS:	Spawning and limited rearing currently exists in this reach. Conservation easements (minimum 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, the placement of LWD, and the preservation of the enhanced buffer.	
LOCATION:	Secs 25 & 26, T20N, R6E, and Sec 30, T20N, R7E (2000 Thomas Bros. Map pg. 838-D1-G1)	
ESTIMATED COST:	>\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE SCORE: H					
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale			
HYDROLOGY	Minor incremental improvement over time as planting matures.		Reach			
SEDIMENT REGIME	LWD improve sorting of sediment transport.		Site			
LWD FUNCTION	Significant LWD placement will jumpstart this ecological process. Will improve recruitment when planting matures.		Reach - Site			
CHANNEL FUNCTION	Changes are expected with the placement of LDW, however the changes are limited because the channel capacity will not be increased.		Reach - Site			
FLOODPLAIN FUNCTION	No Change, this project doesn't address flood plain function.					
GROUNDWATER RECHARGE	No Change					
WATER QUALITY	Low to moderate improvement of water temperature and introduction of nutrients and pesticides.		Reach - Site			
RIPARIAN CONNECTIVITY	Moderate benefit to riparian connectivity.	A narrow riparian buffer will offer limited riparian protection.	Site			
FISH MIGRATION	No Change					
ANTHROPOGENIC EROSION	No Change, due to channel capacity limitations, Anthropogenic erosion could occur. However, the erosion could be beneficial to the ecology at the site to reach.					
OTHERS:	BC-4 addresses the symptom. This project would better address the source of the problem if it were combined with BC-5 and BC-14.					

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	E: L		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None		-			

SOLUTION	SOLUTION EFFICACY SCORE:: H					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom	Immediate on the LWD placement and long term for the planting.	Permanent	Need design, permitting, and landowner willingness.	Reach	>\$250K

BC-4A

GENERAL INFORMATION

RECOMMENDATION NAME:	4A Boise Creek Reach A - Riparian Habitat, channel and floodplain Restoration	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT DESCRIPTION:	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority.	
	Reach A is the highest priority and is from 276th Ave SE to 284 h Ave SE; (RM 2.7 – 3.3) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	н
JUSTIFICATION/ BENEFIT	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding.	
COMMENTS:	Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer.	
LOCATION:	RM 2.7 – 3.3	
ESTIMATED COST:	>\$500K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE SCORE: H					
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale			
HYDROLOGY	Minor incremental improvement over time as planting matures.		Reach			
SEDIMENT REGIME	LWD improve sorting of sediment transport.		Site			
LWD FUNCTION	Significant LWD placement will jumpstart this ecological process. Will improve recruitment when planting matures.		Reach - Site			
CHANNEL FUNCTION	Changes are expected with the placement of LDW, however the changes are limited because the channel capacity will not be increased.		Reach - Site			
FLOODPLAIN FUNCTION	No Change, this project doesn't address flood plain function.					
GROUNDWATER	No Change					
RECHARGE	-					
WATER QUALITY	Low to moderate improvement of water temperature and introduction of nutrients and pesticides.		Reach - Site			
RIPARIAN CONNECTIVITY	Moderate benefit to riparian connectivity.	A narrow riparian buffer will offer limited riparian protection.	Site			
FISH MIGRATION	No Change					
ANTHROPOGENIC	No Change, due to channel capacity limitations, Anthropogenic					
EROSION	erosion could occur. However, the erosion could be beneficial to the ecology at the site to reach.					
OTHERS:	BC-4 addresses the symptom. This project would better address the source of the problem if it were combined with BC-5 and BC-14.					

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	RE: L		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: H					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, tready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom	Immediate on the LWD placement and long term for the planting.	Permanent	Need design, permitting, and landowner willingness.	Reach	>\$250K

BC-4B

GENERAL INFORMATION

RECOMMENDATION NAME:	4B Boise Creek Reach B - Riparian Habitat, channel and floodplain Restoration	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT DESCRIPTION:	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Reach B is the second highest priority and is from 276th Ave SE to 268th Ave SE; (RM 2.7 – 2.2) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	Н
JUSTIFICATION/ BENEFIT COMMENTS: LOCATION:	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding. Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer. 276th Ave SE to 268th Ave SE; (RM 2.7 – 2.2)	
ESTIMATED COST:	>\$500K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICANCE SCORE: H					
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	Minor incremental improvement over time as planting matures.		Reach		
SEDIMENT REGIME	LWD improve sorting of sediment transport.		Site		
LWD FUNCTION	Significant LWD placement will jumpstart this ecological process. Will improve recruitment when planting matures.		Reach - Site		
CHANNEL FUNCTION	Changes are expected with the placement of LDW, however the changes are limited because the channel capacity will not be increased.		Reach - Site		
FLOODPLAIN FUNCTION	No Change, this project doesn't address flood plain function.				
GROUNDWATER RECHARGE	No Change				
WATER QUALITY	Low to moderate improvement of water temperature and introduction of nutrients and pesticides.		Reach - Site		
RIPARIAN CONNECTIVITY	Moderate benefit to riparian connectivity.	A narrow riparian buffer will offer limited riparian protection.	Site		
FISH MIGRATION	No Change				
ANTHROPOGENIC EROSION	No Change, due to channel capacity limitations, Anthropogenic erosion could occur. However, the erosion could be beneficial to the ecology at the site to reach.				
OTHERS:	BC-4 addresses the symptom. This project would better address the source of the problem if it were combined with BC-5 and BC-14.				

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	E: L		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom	Immediate on the LWD placement and long term for the planting.	Permanent	Need design, permitting, and landowner willingness.	Reach	>\$250K

BC-4C

GENERAL INFORMATION

RECOMMENDATION NAME:	4C Boise Creek Reach C - Riparian Habitat, channel and floodplain Restoration	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, Floodplain/Channel processes— The creek has been channelized and disconnected from the floodplain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly devoid of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT DESCRIPTION:	This project is from RM 1.2 (252nd Ave SE) to RM 3.3 (284th Ave SE). This project is proposed to be divided into three phases in order of priority. Reach C is the third highest priority and is from 252nd Ave SE to 268th Ave SE; (RM 2.2 – 1.2) The proposed solution is to restore riparian habitat along the stream banks and place LWD in the channel without compromising natural channel functions and floodplain regimes.	н
JUSTIFICATION/BEN EFIT COMMENTS: LOCATION:	Restores ecosystem functions while maintaining agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding. Spawning and limited rearing habitat currently exist in this reach. Conservation easements (at least 50-feet wide) should be acquired along this reach to allow for the planting of riparian vegetation, placement of LWD, channel modifications where appropriate, and preservation of the enhanced buffer. 252nd Ave SE to 268th Ave SE; (RM 2.2 – 1.2)	
ESTIMATED COST:	>\$500K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Minor incremental improvement over time as planting matures.		Reach
SEDIMENT REGIME	LWD improve sorting of sediment transport.		Site
LWD FUNCTION	Significant LWD placement will jumpstart this ecological process. Will improve recruitment when planting matures.		Reach - Site
CHANNEL FUNCTION	Changes are expected with the placement of LDW, however the changes are limited because the channel capacity will not be increased.		Reach - Site
FLOODPLAIN FUNCTION	No Change, this project doesn't address flood plain function.		
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Low to moderate improvement of water temperature and introduction of nutrients and pesticides.		Reach - Site
RIPARIAN CONNECTIVITY	Moderate benefit to riparian connectivity.	A narrow riparian buffer will offer limited riparian protection.	Site
FISH MIGRATION	No Change		
ANTHROPOGENIC EROSION	No Change, due to channel capacity limitations, Anthropogenic erosion could occur. However, the erosion could be beneficial to the ecology at the site to reach.		
OTHERS:	BC-4 addresses the symptom. This project would better address the source of the problem if it were combined with BC-5 and BC-14.		

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	E: L		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom	Immediate on the LWD placement and long term for the planting.	Permanent	Need design, permitting, and landowner willingness.	Reach	>\$250K

BC-5A

GENERAL INFORMATION

RECOMMENDATION NAME:	5A Boise Creek acquisitions between RM 2.7 and 3.3. for riparian and floodplain corridor restoration.	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, channel/floodplain processes— The creek has been channelized and disconnected from the flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT DESCRIPTION:	Acquire land and/or easements adjacent to the creek, to restore natural channel function and flood plain functions, and construct an off-channel pond or side channel to improve channel habitat, rearing, and refuge during high creek flows. Reach A is the highest priority and is from 276 th Ave SE to 284 th Ave SE; (RM 2.7 – 3.3)	н
JUSTIFICATION/ BENEFIT COMMENTS:	Restores ecosystem functions and agricultural drainage, e.g., improve the fish habitat, water quality and reduce flooding. Spawning and limited rearing currently exists in this reach. The land cost could be high since most of the land is currently being used for agriculture. Acquisitions would occur as opportunities arise.	
LOCATION: ESTIMATED COST:	276 th Ave SE to 284 th Ave SE; (RM 2.7 – 3.3) > \$1 mil	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE SCORE: H					
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale			
HYDROLOGY	≈ 3200 lineal feet of stream, minor incremental improvement over time as plantings matures.	Plantings will improve hydrology as they mature.	Reach			
SEDIMENT REGIME	Moderate improvement in natural sediment regime.	Will protect natural sediment regime.	Reach			
LWD FUNCTION	This acquisition will allow "Eco-comprehensive" placement of LWD from project called for in BC-4, A, B, and C.	Will continue to protect natural LWD functions.	Reach			
CHANNEL FUNCTION	Acquisitions will allow increased channel complexity by pulling back the stream banks and allow or encouraging greater channel migration.	Will allow channel to migrate.	Reach			
FLOODPLAIN FUNCTION	Significantly restores flood plain functions.	Will preserve natural floodplain functions	Reach			
GROUNDWATER RECHARGE	Minor incremental improvement over time as planting matures.					
WATER QUALITY	Significantly, improve water quality by reducing temperature and nutrient loading. Excess nitrogen from livestock will be reduced.	Will continue to protect this function.	Reach			
RIPARIAN CONNECTIVITY	Up to ≈3200 lineal feet of stream will be restored.	Up to ≈3200 lineal feet of riparian habitat will be protected.	Reach			
FISH MIGRATION	There will be incremental benefits by velocity refugia, lower stream temperatures and higher dissolved oxygen.					
ANTHROPOGENIC EROSION	Minor benefits as a result of reduction of livestock access to the riparian zone below current levels.		Reach			
OTHERS:						

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	E: L		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION EFFICACY SCORE::			DRE: : H If there is landowr	er willingness and	acquisition dollars.	
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. inmediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate to long term.	Permanent	Landowner willingness,	Reach	>\$1 mil

BC-5B

GENERAL INFORMATION

RECOMMENDATION NAME:	Boise Creek acquisitions to restore ecosystem functions.	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, channel/floodplain processes— The creek has been channelized and disconnected from the flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources: Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT DESCRIPTION:	Acquire land and/or easements, adjacent to the creek, to restore natural channel function and flood plain functions, and construct an off-channel pond or side channel to improve channel habitat, rearing, and refuge during high creek flows. Acquisitions would occur as opportunities arise. Reach B is from 276th Ave SE to 268th Ave SE,	н
JUSTIFICATION/ BENEFIT	Restores ecosystem functions and agricultural drainage. e.g. improve the fish habitat, water quality and reduce flooding.	
COMMENTS:	Spawning and limited rearing currently exists in this reach. The land cost could be high since most of the land is currently being used for agriculture. Acquisitions would occur as opportunities arise.	
LOCATION:	Sec25, T20N, R6E (2000 Thomas Bros. Map pg. 838-D1-G1) At select locations between river mile 1.3 to 3.2 (Beaver Creek confluence)	
ESTIMATED COST:	> \$1 mil	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	There will be slight improvement from revegetation of floodplain areas.	Moderate protect of natural hydrology will preserve floodplain integrity.	Reach
SEDIMENT REGIME	Moderate improvement, sediment transport will continue to be sorted at this reach.	Will protect natural sediment process.	Reach
LWD FUNCTION	This acquisition will allow better placement of LWD from project BC-4	Will continue to protect natural LWD functions.	Reach
CHANNEL FUNCTION	This acquisitions will allow increased channel capacity by pulling back the stream banks and allow or encouraging greater channel migration.	Will allow channel to migrate.	Reach
FLOODPLAIN FUNCTION	Significantly restores flood plain functions.	Will preserve natural floodplain functions	Reach
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Significantly improve water quality by reducing temperature and nutrient loading.	Will continue to protect this function.	Reach
RIPARIAN CONNECTIVITY	Will significantly increase riparian buffer area of stream.	Riparian habitat will be protected.	Reach
FISH MIGRATION	No Change		
ANTHROPOGENIC EROSION	Slight benefit by eliminating livestock access to bank areas.		Reach
OTHERS:			

HAZARDS TO L	IFE, LIMB, AND PROF	SCORE: L			
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Nuisance	Reduced use of	Not urgent, because no life	No County facilities are	Annually	Site
flooding	property for farming	or property threat.	affected. Primarily private		
	and livestock use.		property.		

SOLUTION	SOLUTION EFFICACY SCORE:: H					H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for leasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate to long	Permanent	Landowner willingness,	Reach	> \$1 mil
		term.				

BC-5C

GENERAL INFORMATION

RECOMMENDATION	Boise Creek acquisitions to restore ecosystem functions.	SCORE
NAME:		
RECOMMENDATION	Habitat, channel/floodplain processes— The creek has been channelized and disconnected from the	
PROBLEMS	flood plain, and riparian habitat degradation by agriculture and grazing land-use practices is a	
ADDRESSED:	widespread habitat impairment in this reach. This reach is also nearly void of any LWD. (Sources:	
	Basin Steward; Habitat Assessment; Puyallup Tribe)	
PROJECT	Acquire land and/or easements, adjacent to the creek, to restore natural channel function and flood	
DESCRIPTION:	plain functions, and construct an off-channel pond or side channel to improve channel habitat,	
	rearing, and refuge during high creek flows.	
	Reach C is from 268th Ave SE to 252nd Ave SE.	Н
	Acquisitions would occur as opportunities arise.	
JUSTIFICATION/BEN	Restores ecosystem functions and agricultural drainage. e.g. improve the fish habitat, water quality	
EFIT	and reduce flooding.	
COMMENTS:	Spawning and limited rearing currently exists in this reach. The land cost could be high since most of	
	the land is currently being used for agriculture Acquisitions would occur as opportunities arise.	
LOCATION:	Sec25, T20N, R6E (2000 Thomas Bros. Map pg. 838-D1-G1) At select locations between river mile	
	1.3 to 3.2 (Beaver Creek confluence)	
ESTIMATED COST:	>\$1 mil	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	There will be slight improvement if ### acres are reforested.	Moderate protect of natural hydrology will preserve ### acres of forested land.	Reach
SEDIMENT REGIME	Moderate improvement, sediment transport will continue to be sorted at this reach.	Will protect natural sediment process.	Reach
LWD FUNCTION	This acquisition will allow better placement of LWD from project BC-4	Will continue to protect natural LWD functions.	Reach
CHANNEL FUNCTION	This acquisitions will allow increased channel capacity by pulling back the stream banks and allow or encouraging greater channel migration.	Will allow channel to migrate.	Reach
FLOODPLAIN FUNCTION	Significantly restores flood plain functions.	Will preserve natural floodplain functions	Reach
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Significantly improve water quality by reducing temperature and nutrient loading.	Will continue to protect this function.	Reach
RIPARIAN CONNECTIVITY	Will significantly increase riparian buffer area of stream. ### of stream feet.	### feet of riparian habitat will be protected.	Reach
FISH MIGRATION	No Change		
ANTHROPOGENIC EROSION	Slight benefit by eliminating livestock access to bank areas.		Reach
OTHERS:			

HAZARDS TO L	IFE, LIMB, AND PROF	SCORE: L			
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Nuisance	Reduced use of	Not urgent, because no life	No County facilities are	Annually	Site
flooding	property for farming	or property threat.	affected. Primarily private		
	and livestock use.		property.		

SOLUTION	SOLUTION EFFICACY SCORE:: H					H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for leasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate to long	Permanent	Landowner willingness,	Reach	> \$1 mil
		term.				

GENERAL INFORMATION

RECOMMENDATION	Beaver Creek Channel Relocation	SCORE
NAME:		
RECOMMENDATION	Habitat—Approximately 1,400 feet of Beaver Creek is located adjacent to 284th Ave SE. There is no	
PROBLEMS	riparian vegetation or LWD along most of this reach and the existing channel is in poor condition.	
ADDRESSED:	(Source: Habitat Assessment)	
PROJECT	The proposed project is to relocate approximately 600 to 1400 feet of channel away from 284th Ave	
DESCRIPTION:	SE and establish at least a 50 ft riparian buffer on both sides of the creek. LWD placement is also	
	planned in this reach.	
JUSTIFICATION/	Improves fish habitat and water quality, especially temperature.	M
BENEFIT		M
COMMENTS:	See Boise Creek HSPF hydrologic model for stream flows. Right-of-way acquisition could be a	
	problem since the channel relocation is on private property and currently used as pasture. Feasibility	
	may be limited by existing infrastructure and land use constraints.	
LOCATION:	1,400 feet of Beaver Creek adjacent to 284th Ave SE	
ESTIMATED COST:	>\$500K	
	Detailed cost estimate based on 600 Feet relocated.	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA		SCORE: M	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Low benefit to hydrology.		Site – Reach.
SEDIMENT REGIME	Minor improvements to sediment regime.		Site – Reach
LWD FUNCTION	LWD function would be jumpstarted with initial LWD placement and the plantings will significantly improve future LWD recruitment.		Site - Reach
CHANNEL FUNCTION	Moderate improvement, channel would be allowed to migrate within 50-ft buffer.		Site – Reach
FLOODPLAIN FUNCTION	Moderate improvement, the project should have an appropriate buffer width to allow restoration of natural floodplain functions.		Site – Reach
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Significant improvement immediately and long term, due to establishment of a riparian buffer. Reduction of temperature and road runoff impacts will also accrue from this project.		Site – Reach
RIPARIAN CONNECTIVITY	Significant improvements, project will reestablish a riparian buffer and create up to 1400 ft of intact riparian corridor.		Site – Reach
FISH MIGRATION	Improvement through cooler water temperatures and increased dissolved oxygen.		
ANTHROPOGENIC EROSION	Erosion along the road shoulder and within overgrazed pasture will be greatly reduced.		Site Reach
OTHERS:	Juvenile coho are known to use Beaver Creek. Other species and life stages of fish are unknown.		Site – Reach

HAZARDS TO L	IFE, LIMB, AND PROF	SCORE: N/A			
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: M					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate to long term benefits to be gained as the realign and re- vegetation matures.	Ongoing depending on availability of funding, ability to acquire property, and/or landowner cooperation.	Feasibility study, funding, detailed design and construction is needed. Permits, engineering, and landowner willingness. Easements or other acquisition approaches are probably necessary to accomplish this project. Need significant rescoping.	Site- Reach	>\$500K

GENERAL INFORMATION

RECOMMENDATION	Boise Creek LWD Complex Placement RM 4.9 - 5.4	SCORE
NAME:		
RECOMMENDATION PROBLEMS ADDRESSED:	Erosion, Channel processes/function, Habitat— The Boise Creek Channel adjacent to Highway 410 near the Weyerhaeuser Mill has been a continuing source of sediment, particularly through the Enumclaw Golf Course. The channel capacity through the golf course has continued to be lessened through the years. Most of the sediment that settles in the golf course is good quality gravel. Finer	
	material settles out in the lower reaches of channel particularly between 268th Ave SE and 252nd Ave SE. (Source: Personal Knowledge) Restore channel and habitat diversity by adding LWD.	
PROJECT DESCRIPTION:	There are numerous channel erosion areas along this reach. Several debris dams and LWD could be constructed in this reach to reduce the volume of downstream sedimentation, and increase channel and habitat complexity.	н
JUSTIFICATION/ BENEFIT	Reducing the amount of downstream sedimentation will help improve the habitat value of the Boise Creek channel downstream of 284th Ave SE and reduce the flooding problems on the golf course including the proposed relocated channel (BC-2). Increases the hydraulic complexity, sediment trapping, and overhead cover in the placement reach it should increase habitat complexity.	
COMMENTS:	This reach needs to be walked to determine the best locations to place these improvements. Consider complex log jams and LWD seeding. (expect mobile wood.)	
LOCATION:	NW1/4, S29, T20N, R7E (2000 Thomas Bros. Map pg. 808-J7	
ESTIMATED COST:	\$75K-\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICATION OF THE PROPERTY OF TH	ANCE	1	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.) Protect (Describe how or what ecological will be protected.)		Scale	
HYDROLOGY	No Change			
SEDIMENT REGIME	Significant improvement, project expected to reduce fine sediments downstream within spawning areas.		Reach	
LWD FUNCTION	Significant improves this function by adding LWD. E.g. natural stream complexity and diversity.		Reach	
CHANNEL FUNCTION	Improve pool to riffle ratio for resident trout.		Reach	
FLOODPLAIN FUNCTION	No Change			
GROUNDWATER RECHARGE	No Change			
WATER QUALITY	Improvement in fine sediments from upstream logging activities.		Reach	
RIPARIAN CONNECTIVITY	No Change			
FISH MIGRATION	No Change			
ANTHROPOGENIC EROSION	Strategic placement of LWD would protect HWY 410, from road embankment toe erosion.		Site	
OTHERS:	Cutthroat population upstream above the waterfall, is a continual source for repopulating the downstream population in the event of adverse impacts on habitat.		Reach	

HAZARDS TO L	IFE, LIMB, AND PROF	SCOR	RE: N/A		
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE::	M
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	source	Immediate and ongoing.	Up to 50 years.	Need engineering, permits, design, and to coordinate with John Hancock Timber, geomorphologic analysis of the down stream reach is needed.	Multiple reaches.	\$75K- \$250K

GENERAL INFORMATION

RECOMMENDATION	Boise Creek Stream Home Relocation; Near RM 0.4	SCORE
NAME:		
RECOMMENDATION	Erosion—Property owners complained to King County about stream bank erosion behind their home.	
PROBLEMS	The top of the creek bank is approximately 30 feet from their home. The stream bank is very steep,	
ADDRESSED:	approximately 1/2 horizontal to 1 vertical or steeper and about 30-feet high. (Source: County	
	Drainage Complaint Log, Complaint No. 50E)	
PROJECT	Evaluate for possible buy-out or home relocation to other side of road (on same parcel #)	
DESCRIPTION:		
JUSTIFICATION/	Slope stability; address complaint filed about possible slope failure (complaint 1996-0636)	${f L}$
BENEFIT		
COMMENTS:	A geotechnical analysis is required to confirm the risk of further bank failure and possible methods to	
	stabilize the slope.	
	This is a private problem, level of risk is unknown.	
LOCATION:	Near 46925 248th Ave SE; E1/2, S35, T20N, R6E (2000 Thomas Bros. Map pg. 838-C2)	
ESTIMATED COST:	\$75K-\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	SCORE: L		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	No Change		Site
SEDIMENT REGIME	No Change		Site
LWD FUNCTION	No Change		Site
CHANNEL FUNCTION	No Change		Site
FLOODPLAIN FUNCTION	No Change		Site
GROUNDWATER RECHARGE	No Change		Site
WATER QUALITY	No Change		Site
RIPARIAN CONNECTIVITY	No Change		Site
FISH MIGRATION	No Change		Site
ANTHROPOGENIC EROSION	No Change		Site
OTHERS:	No Change		Site

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale	
Landslide	Residence	This is a private problem and the level of risk is unknown.	Private homeowner.	Continual	Site	

SOLUTION	SOLUTION EFFICACY SCORE:: M					M
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need funter study, ready for feasibility, ready to build. Also, include what elso is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate if home were purchased or relocated.	Permanent if moved or bought out.	A geotechnical analysis is required to confirm the risk of further bank failure and possible methods to stabilize the slope. This is a private problem, level of risk is unknown.	Site	\$75K- \$250K

GENERAL INFORMATION

RECOMMENDATION	Boise Creek Stream Bank Stabilization; Near RM 1.1	SCORE
NAME:		
RECOMMENDATION	Erosion—The left stream bank immediately upstream of SE 252nd is sloughing in the creek. The	
PROBLEMS	channel side slope is approximately 1H:1V and the bank height is approximately 15 feet. (Source:	
ADDRESSED:	Field Reconnaissance)	
PROJECT	The channel side slope should be flattened to 2H:1V and stabilized using bioengineering methods.	
DESCRIPTION:		
JUSTIFICATION/	Significant amount of sediments is transported downstream and given time the channel could cause	${f L}$
BENEFIT	erosion problems to the County bridge.	
COMMENTS:	Due location of current structure, there is no practical engineering solution to this issue. Consider	
	acquistion opportunities of this site. See project recommendation BC-21.	
LOCATION:	S1/2, S26, T20N, R6E (2000 Thomas Bros. Map pg. 838-C1)	
ESTIMATED COST:	\$75K-\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE				
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	No Change				
SEDIMENT REGIME	No Change				
LWD FUNCTION					
CHANNEL FUNCTION					
FLOODPLAIN FUNCTION					
GROUNDWATER RECHARGE					
WATER QUALITY	Will reduce sediment from sloughing bank.		Site		
RIPARIAN CONNECTIVITY	Will increase moderately at the site.		Site		
FISH MIGRATION					
ANTHROPOGENIC EROSION					
OTHERS:		_			

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				RE: L
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Landslide; approximately 10 ft.	Private home yard.	Not urgent.	Private matter	On going	Site

SOLUTION	N EFFICACY				SCORE::	L
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
No	Symptom	Undetermined	Undetermined	Landowner willingness is needed first, design, permits, engineering, funding.	Site	\$75K- \$250K

BC-10A

GENERAL INFORMATION

RECOMMENDATION NAME:	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Feasibility Component)	SCORE
NAME: RECOMMENDATION PROBLEMS ADDRESSED:	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert. (Sources: Basin Steward; Habitat Assessment)	
PROJECT DESCRIPTION:	There may be an opportunity to acquire some property when the Mill site is cleared. A feasibility study should be done to look at ways to enhance the habitat in this reach and preserve the stormwater detention capacity of the channel surrounding the old Mill pond. Restore historic wetland complex at site. This would include the daylighting of the stream.	
JUSTIFICATION/ BENEFIT	Improve and protect habitat and stormwater detention storage.	
COMMENTS:	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage. Needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DDESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put it on the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur.	Н
LOCATION:	Weyerhaeuser Mill plant and operating area. S28,T20N,R7E (2000 Thomas Bros. Map pg. 839-B1)	
ESTIMATED COST:	Feasibility <\$75K Design & Construction >\$500K right-of-way or easement >\$100K acquistion >\$500K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Significant improvement throughout the watershed. This project could help moderate flows downstream. Restore flow potential to pre-altered state. This benefit could be realized if the project is feasible and property acquisition is successful.	Project would allow wetland complex and alluvial valley fan to be restored.	Watershed
SEDIMENT REGIME	Could significantly reduce fine sediments from the upper reaches of the watershed. This benefit could be realized if the project is feasible and property acquisition is successful.	If acquired this property would trap fine sediments through the upper watershed. This would happen as result of restore the wetland functions that use to exist at this site.	Watershed
LWD FUNCTION			
CHANNEL FUNCTION	If property acquired, moderating channel flows and hydrology would significantly improve downstream channel function. Again, due to restoring wetland function.	Protection of this proposed wetland restoration would improve offsite channel function.	Watershed
FLOODPLAIN FUNCTION	Floodplain function would improve due to the wetland being reestablished at this site, if it were acquired.	Will be protected if acquired and restored.	Site
GROUNDWATER RECHARGE	The wetland restoration could improve groundwater recharge.	Will be protected if acquired and restored.	Watershed
WATER QUALITY	The wetland restoration would significantly improve upstream water quality, which could impact entire watershed.	Will be protected if acquired and restored.	Watershed
RIPARIAN CONNECTIVITY	The project could serve a major connector of riparian habitat for the upper and middle subbasin for Boise Creek.	Will be protected if acquired and restored.	Watershed
FISH MIGRATION	Current culvert through the mill site is a fish blockage. This project would remove this fish blockage and provide resident fish access to new habitat.	Will be protected if acquired and restored.	Watershed
ANTHROPOGENIC			

EROSION		
OTHERS:	If BC-23 and BC-27 is feasible this project could provide significant access to new habitat, in the upper	
	watershed, to chinook and coho.	

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: H					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, tready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Controls geographic extent of problem. The problem is the landuse in the upper basin.	Acquisition and restoration will take more time. Long term solution.	Permanent if carried out.	Feasibility should be conducted immediately. The expense of the project is likely to require significant grant funding.	Watershed	Feasibility <\$75K Design & Construction >\$500K right-of-way >\$100K acquistion >\$500K

BC-10B

GENERAL INFORMATION

RECOMMENDATION	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Aquistion Component)	SCORE
NAME:		
RECOMMENDATION	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert.	
PROBLEMS	(Sources: Basin Steward; Habitat Assessment)	
ADDRESSED:		
PROJECT	This proposal would aquire some property on the mill site. If aquired restoration of this area could be	
DESCRIPTION:	investigated.	
JUSTIFICATION/	Improve and protect habitat and stormwater detention storage.	
BENEFIT		
COMMENTS:	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage. Needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DDESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put it on the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur.	Н
LOCATION:	Weyerhaeuser Mill plant and operating area. S28,T20N,R7E (2000 Thomas Bros. Map pg. 839-B1)	
ESTIMATED COST:	Feasibility <\$75K	
	Design & Construction >\$500K	
	right-of-way or easement >\$100K	
	acquistion >\$500K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICANCE					
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	Significant improvement throughout the watershed. This project could help moderate flows downstream. Restore flow potential to pre-altered state. This benefit could be realized if the project is feasible and property acquisition is successful.	Project would allow wetland complex and alluvial valley fan to be restored.	Watershed		
SEDIMENT REGIME	Could significantly reduce fine sediments from the upper reaches of the watershed. This benefit could be realized if the project is feasible and property acquisition is successful.	If acquired this property would trap fine sediments through the upper watershed. This would happen as result of restore the wetland functions that use to exist at this site.	Watershed		
LWD FUNCTION					
CHANNEL FUNCTION	If property acquired, moderating channel flows and hydrology would significantly improve downstream channel function. Again, due to restoring wetland function.	Protection of this proposed wetland restoration would improve offsite channel function.	Watershed		
FLOODPLAIN FUNCTION	Floodplain function would improve due to the wetland being reestablished at this site, if it were acquired.	Will be protected if acquired and restored.	Site		
GROUNDWATER RECHARGE	The wetland restoration could improve groundwater recharge.	Will be protected if acquired and restored.	Watershed		
WATER QUALITY	The wetland restoration would significantly improve upstream water quality, which could impact entire watershed.	Will be protected if acquired and restored.	Watershed		
RIPARIAN CONNECTIVITY	The project could serve a major connector of riparian habitat for the upper and middle subbasin for Boise Creek.	Will be protected if acquired and restored.	Watershed		
FISH MIGRATION	Current culvert through the mill site is a fish blockage. This project would remove this fish blockage and provide resident fish access to new habitat.	Will be protected if acquired and restored.	Watershed		
ANTHROPOGENIC EROSION					

OTHERS:	If BC-27 is feasible, this project could provide	
	significant access to new habitat, in the upper	
	watershed, to chinook and coho.	

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale	
None						

SOLUTION	SOLUTION EFFICACY SCORE:: H					Н
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	source	However, acquisition and restoration will take more time.	Permanent if carried out.	Feasibility should be conducted immediately. The expense of the project is likely to require significant grant funding.	Watershed	Feasibility <\$75K Design & Construction >\$500K right-of-way >\$100K acquistion >\$500K

BC-10C

GENERAL INFORMATION

RECOMMENDATION NAME:	Weyerhaeuser Stream Restoration; RM 5.4 - 6.1 (Capitol Component)	SCORE
RECOMMENDATION PROBLEMS	Habitat—Currently much of the Boise Creek flow is bypassed through the Mill in a 42-inch culvert. (Sources: Basin Steward; Habitat Assessment)	
ADDRESSED:	(Sources) Businesse water, Talestan Historian,	
PROJECT DESCRIPTION:	Enhance the habitat in this reach and preserve the stormwater detention capacity of the channel surrounding the old Mill pond. Restore historic wetland complex at site. This would include the	
JUSTIFICATION /BENEFIT	daylighting of the stream. Improve and protect habitat and stormwater detention storage.	
COMMENTS:	At a minimum, the County needs to look at any possible redevelopment of this area in an effort to preserve if not enhancing the existing habitat and detention storage. Needs feasibility study and if determined feasible then we would move to design and construction. It use to be a 24 acres lake - artificially impounded. There might be semi-hazardous waste at mill site. Obtain records from DDESshoreline permit for the mill pond conversion. Exam historic land cover and functions at mill pond site. Mill is approximately 200 – 300 acres and the feasibility study would need to determine the size of the acquisition or easements. Weyerhaeuser is currently dismantling this site and may put it on the market. The County should give a high priority to a feasibility study to not miss this opportunity if were to occur.	
LOCATION:	WDFW and King County staff has documented large populations of resident salmonids upstream and downstream from the old Weyerhaeuser White River Mill. Within the mill site at RM 5.7 is a log storage area that until the early 1990s was an off-channel wetland that served as a mill pond where logs were debarked prior to milling. The Mill Pond was technically a Shoreline of the State, because it exceeded 20 acres in size, and it was also classified by King County as a Class 1 Wetland because of its size and habitat value for a variety of fish and wildlife species. The pond was also deemed to be "Waters of the United States" subject to Section 404 of the federal Clean Water Act of 1972 because of its adjacency to Boise Creek. The old mill pond, which ranged up to 8.5 feet in depth, also provided flood storage that protected reaches of Boise Creek downstream from SR-410, and possibly also the Enumclaw Golf Course. During draw-down of the pond, prior to filling and conversion to an upland log storage facility, cutthroat and rainbow trout ranging up to 18" in length were captured and relocated to areas down stream, indicating that this wetland provided productive salmonid rearing habitat in spite of water quality impacts, namely petroleum hydrocarbons in the pond sediments, from operation of the mill (Don Finney, pers.comm. 2004). Prior to filling of the mill pond, several fish kills were documented in Boise Creek downstream from the mill, including one in 1983 when dead fish were found all the way from the pond to the mouth of Boise Creek, and Ecology levied a fine against the Weyerhaeuser Company for spill damages. The White River Mill has been closed and its future fater—i.e., whether a future owner would resume mill operations or convert the site to another land use—cannot at present be determined. If the mill is not reopened and the site is converted to a different use, it may be possible to relocate the stream into an open channel along the east side of the property and incorporate restoration of all or part of th	Н
ESTIMATED COST:	Feasibility <\$75K Design & Construction >\$500K right-of-way or easement >\$100K	
	acquistion >\$500K	

BC-10C Continued

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	S	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Restoration of all or part of the millpond would restore natural stormwater detention functions and help protect downstream reaches from flooding impacts.	Project would allow wetland complex and alluvial valley fan to be restored.	Watershed
SEDIMENT REGIME	Restoration of Boise Creek within the and upstream from the mill site will help restore natural sediment transport dynamics.	If acquired this property would trap fine sediments through the upper watershed. This would happen as result of restore the wetland functions that use to exist at this site.	Watershed
LWD FUNCTION	LWD functions will improve in the short term through addition of LWD to this reach, and over the log term through riparian revegetation, which will provide for future LWD recruitment.		Reach
CHANNEL FUNCTION	Channel functions are extremely degraded due to culverts and channelization. Amelioration of these conditions will be improved.	Protection of this proposed wetland restoration would improve offsite channel function.	Watershed
FLOODPLAIN FUNCTION	Floodplain functions can be improved through restoration of this reach.	Will be protected if acquired and restored.	Site
GROUNDWATER RECHARGE	Groundwater recharge will likely be improved by day-lighting the stream within a new channel alignment around the mill.	Will be protected if acquired and restored.	Watershed
WATER QUALITY	Walter quality will be improved through revegetation of the riparian corridor.	Will be protected if acquired and restored.	Watershed
RIPARIAN CONNECTIVITY	Riparian connectivity will be restored through stream day-lighting and revegetation of the currently fragmented stream corridor.	Will be protected if acquired and restored.	Watershed
FISH MIGRATION	Fish migration will be restored by removal of passage barriers.	Will be protected if acquired and restored.	Watershed
ANTHROPOGENIC EROSION OTHERS:	Anthropogenic erosion will be reduced by relocation into a more natural channel and revegetation. If BC-23 is implemented to restore anadromous fish passage upstream from the golf course, this project will greatly increase salmonid spawning and rearing		
	habitat, and flood refugia.		

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				E: N/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (E.g. immediate, lyr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (E.g. need further study, ready for build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Sources.	This project should not be implemented until after BC-23 is implemented.	This recommenda tion will provide watershed benefits in perpetuity	This recommendation needs further feasibility study and scoping. A feasibility study could cost up to \$50 K. Design and construction costs are unknown at this time.	Up to one third of the watershed would be made accessible to anadromous fish.	Feasibility <\$75K Design & Construction >\$500K right-of-way >\$100K acquistion >\$500K

GENERAL INFORMATION

RECOMMENDATION	Beaver Creek Revegetation	SCORE
NAME:		
RECOMMENDATION	Habitat—The stream corridor, immediately upstream of 284th Ave SE, has been greatly disturbed	
PROBLEMS	and there is livestock access to the stream. (Source: Habitat Assessment)	
ADDRESSED:		
PROJECT	Restore the Beaver Creek channel immediately upstream of 284th Ave SE and plant riparian	
DESCRIPTION:	vegetation along Beaver Creek.	
JUSTIFICATION/	Currently the channel is in poor habitat condition due to bank trampling and unrestricted livestock	M
BENEFIT	access.	IVI
COMMENTS:	Possible enforcement action to require property owner to restore channel and prevent livestock access	
	to stream.	
	Property owners need to comply with Livestock ordinance. Property is currently for sale.	
LOCATION:	S1/2, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	
ESTIMATED COST:	<\$75K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE				
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	No Change		Site		
SEDIMENT REGIME	Minor improvement to sediment transport.		Site		
LWD FUNCTION	No Change		Site		
CHANNEL FUNCTION	Channel function is expected to improve with the restoration of the site. Will exclude livestock intrusion and restoration will make it function more naturally.		Site		
FLOODPLAIN FUNCTION	No Change, this project doesn't address flood plain function.				
GROUNDWATER RECHARGE	No Change				
WATER QUALITY	Moderate improvement of water temperature and introduction of nutrients and pesticides.		Site		
RIPARIAN CONNECTIVITY	Moderate benefit to riparian connectivity.	A narrow riparian buffer will offer limited riparian protection.	Site		
FISH MIGRATION	No Change				
ANTHROPOGENIC EROSION	Keeping livestock out of the stream will improve erosion impacts.		Site		
OTHERS:	Stream is used by all life stages of coho and cutthroat.				

HAZARDS TO LIFE, LIMB, AND PROPERTY				SCOR	SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale	
None						

SOLUTION	SOLUTION EFFICACY SCORE:: L					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (E.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (E.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate	Permanent if easement is acquired.	Possible enforcement action; coordinate with livestock program. Landowner willingness is needed for significant restoration.	Site	<\$75K

GENERAL INFORMATION

RECOMMENDATION	Flooding near 46905 283rd Ave SE	SCORE
NAME:		
RECOMMENDATION	Flooding—Drainage from a shallow ditch appears to have been blocked. Drainage overflows the	
PROBLEMS	ditch and flows across 283rd Ave SE before flowing into Beaver Creek. (Source: County Drainage	
ADDRESSED:	Complaint Log, Complaint No. 1997-1162)	
PROJECT	Construct a catch basin along 283rd to collect the flood flow and use a combination of pipe and	
DESCRIPTION:	channel to better convey the flows to Beaver Creek.	
JUSTIFICATION/	Reduce flooding of 283rd Ave SE and minor flooding to private property.	\mathbf{L}
BENEFIT		
COMMENTS:	Refer to NDAP.	
LOCATION:	SE 469th Street and 283rd Ave SE	
	NW1/4,S31,T20N,R7E (2000 Thomas Bros. Map pg. 838-G2)	
ESTIMATED COST:	<\$75K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICANCE			SCORE: L	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY			Site	
SEDIMENT REGIME			Site	
LWD FUNCTION			Site	
CHANNEL FUNCTION			Site	
FLOODPLAIN FUNCTION				
GROUNDWATER RECHARGE				
WATER QUALITY			Site	
RIPARIAN CONNECTIVITY			Site	
FISH MIGRATION				
ANTHROPOGENIC EROSION				
OTHERS:				

HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: L	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Flooding	Road-283 Ave SE and local field. (Small dead-end road.)	Not urgent	Roads	Unknown	Site

SOLUTION EFFICACY SCORE:: L						
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Unknown	Source – a shallow ditch appears to be a block.	Immediate – refer to NDAP	Unknown	Needs investigation	Site	<\$75K

GENERAL INFORMATION

RECOMMENDATION NAME:	Subbasin 5 Riparian Under Story Conifer Plantings	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat—Currently there are mostly deciduous trees along this reach of Boise Creek. Planting conifer trees in this area would improve the riparian habitat. (Sources: Basin Steward; Habitat Assessment)	
PROJECT DESCRIPTION:	Use volunteers or County forces to plant this area.	
JUSTIFICATION/ BENEFIT	Improve riparian habitat, and provides long term recruitment of coniferous trees into creek.	H
COMMENTS:	No right-of-way problems are anticipated. Could be done programmatically. Refer project to SHRP.	
LOCATION:	Between the Boise Creek crossing of SR 410 near the Weyerhaeuser Mill to the Boise Creek waterfall near the Enumclaw GC. S29,T20N,R7E (2000 Thomas Bros. Map pg. 808-J7) river mile 4.3 to 5.5.	
ESTIMATED COST:	<\$75K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	\$	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY			
SEDIMENT REGIME	LWD recruitment will improve the trapping and sorting of sediment.		Reach
LWD FUNCTION	Will improve long term LWD recruitment. By adding conifers. Conifers are better for system health because they grow bigger, LWD lasts longer.		Reach
CHANNEL FUNCTION	LWD recruitment will improve longer term pools and riffles – i.e. channel complexity.		Reach
FLOODPLAIN FUNCTION			
GROUNDWATER RECHARGE			
WATER QUALITY			Reach
RIPARIAN CONNECTIVITY	Riparian connectivity currently exists, adding conifers will increase the species composition.		Reach
FISH MIGRATION			
ANTHROPOGENIC EROSION	This is reach is highly erosive. Conifer planting will help stabilize the erosion.		Reach
OTHERS:		_	

HAZARDS TO LIFE, LIMB, AND PROPERTY				SCOR	E: N/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: H					H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Long term- planting needs to mature.	Long term	Landowner willingness and funding is needed.	Reach.	<\$75K

GENERAL INFORMATION

RECOMMENDATION NAME:	Overbank Flooding of Boise Creek between 280th Ave. SE and 260th Ave. SE	SCORE
RECOMMENDATION PROBLEMS ADDRESSED: PROJECT DESCRIPTION:	Flooding—Drainage District #6 Chairman said Boise Creek overtops its creek banks east of 276th Ave SE and flows overland before entering the creek again near 260th Ave SE. (Sources: Drainage District No. 6; HSPF Modeling) Construct setback berms along the low creek banks to provide additional channel capacity.	
JUSTIFICATION/ BENEFIT	Reduce flooding of farm land and some homes during major flood events.	H if in conjunctio
COMMENTS:	As written the project deals strictly with the flooding issue and it does not address the ecological processes. If the project is combined with BC4 and BC5 (acquire easement, restore natural channel and floodplain processes, and add LWD and restore riparian vegetation) this project could reduce flooding and restore significant ecological processes. If the comprehensive approach is taken, this project could provide significant rearing habitat for coho and chinook.	n with BC4 and BC5; L without.
LOCATION:	Low bank areas along Boise Creek between 280th Ave SE and 260th Ave SE. S25,T20N,R6E & S39,T20N,R7E (2000 Thomas Bros. Map pg. 838-D1-G1)	
ESTIMATED COST:	>\$250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICANCE SCORE: L IF NOT COMBINED WITH BC 4 AND BC 5				
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	There will be slight improvement if when areas are reforested.	Moderate protection of natural hydrology will be preserved.	Reach	
SEDIMENT REGIME	Moderate improvement, sediment transport will continue to be sorted at this reach.	Will protect natural sediment process.	Reach	
LWD FUNCTION	This acquisition will allow better placement of LWD from project BC-4	Will continue to protect natural LWD functions.	Reach	
CHANNEL FUNCTION	This acquisitions will allow increased channel capacity by pulling back the stream banks and allow or encouraging greater channel migration.	Will allow channel to migrate.	Reach	
FLOODPLAIN FUNCTION	Significantly restores flood plain functions.	Will preserve natural floodplain functions	Reach	
GROUNDWATER RECHARGE	No Change			
WATER QUALITY	Significantly, improve water quality by reducing temperature and nutrient loading.	Will continue to protect this function.	Reach	
RIPARIAN CONNECTIVITY	Will significantly increase riparian buffer area of stream area	Riparian habitat will be protected.	Reach	
FISH MIGRATION ANTHROPOGENIC EROSION	No Change Slight benefit by eliminating livestock access to bank areas.		Reach	
OTHERS:				

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY			SCOR	RE: L
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Flooding	Farm land and some	Not urgent.	Private matter	Flood frequency	Reach
	homes.			events, periodic.	

SOLUTION EFFICA	CY	SCOI	RE:: H IF IN CON. AND BC5, OTHE	UNCTION WITH ERWISE L	I BC4	
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes for flooding and potentially for the aquatic resources if BC 4 and BC5 were implemented.	Symptom – however if BC4 and BC5 were implemented it would better address the source.	Immediate for addressing flooding and some ecological functions, but any planting component would require time for plants to mature before benefits are realized.	Long term	Landowner willingness, feasibility (in-light of BC4 and BC5), and engineering.	Reach.	>\$250K

GENERAL INFORMATION

RECOMMENDATION	Boise Creek and 284th Ave SE Riparian Habitat Improvement	SCORE
NAME:		
RECOMMENDATION	Habitat—both banks have been cleared of vegetation, armored with riprap and replanted with	
PROBLEMS	ornamental cultivars. The banks over stepend and currently unstable.	
ADDRESSED:		
PROJECT	Reslope the banks to a more stable slope angle and install LWD and replant with native vegetation.	
DESCRIPTION:	Create a more natural channel form, especially on the inside bend. (Source: Habitat Assessment)	
JUSTIFICATION/	This is a valuable reach of habitat spawning and adding vegetation would provide protect to the fish	
BENEFIT	and improve their habitat.	M
COMMENTS:	The site is on a residential lot close to a single family dwelling unit. This structure may be in the	IVI
	floodplain and the possibility of a buyout may be considered. The current amoring and ornamental vegetation was a response to the 1996 flood. The landowner may not be willing to modify the	
	channel untill flood damage occurs again.	
LOCATION:	Located immediately upstream of the Boise Creek crossing of 284th Ave SE. S1/2,S30,T20N,R7E	
	(2000 Thomas Bros. Map pg. 838-G2)	
ESTIMATED COST:	<\$200K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE				
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	No Change				
SEDIMENT REGIME	Will revert to a natural regime.		Site		
LWD FUNCTION	Will improve as planting mature.		Site		
CHANNEL FUNCTION	LWD and bank resloping will improve channel function.		Site		
FLOODPLAIN FUNCTION	Will improve to a more natural function.		Site		
GROUNDWATER RECHARGE	No Change				
WATER QUALITY	Water temperature and turbidity would improve as planting matures and LWD is recruited.		Site		
RIPARIAN CONNECTIVITY	Will improve riparian connectivity for approximately 300 ft of stream bank.		Site		
FISH MIGRATION	No Change		Site		
ANTHROPOGENIC EROSION	Will reduce toe and face erosion.		Site		
OTHERS:	Score, medium because of short reach length, location to private residence.				

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: L	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale	
Periodic flooding of property.	No risk to dwelling, flooding occurs on the yard.	Low	Private	Periodic	Site	

SOLUTION	SOLUTION EFFICACY SCORE:: M					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source (primarily) and symptom. The solutions effectiveness is limited by the constraint that the creek must pass underneath 284 th downstream of the site.	Long term – benefits as planting matures.	Long term	Property owner has recently armored banks and planted ornamental vegetation. This project could possibly be implemented after a major flood event or change of ownership.	Site	>\$250K

BC-16A

GENERAL INFORMATION

RECOMMENDATION	Beaver Creek Acquisition and/or easement, and restoration. (Acquisition Component)	SCORE
NAME:		
RECOMMENDATION	Habitat—The stream corridor from the confluence of Boise Creek and Beaver Creek to 288th Ave SE	
PROBLEMS	is mostly devoid of any stream side vegetation and is covered with a lot of reed-canary grass.(Source:	
ADDRESSED:	Habitat Assessment)	
PROJECT	Aquire property or easements where there is property owner willingness, in order to implement	
DESCRIPTION:	restoration actions identified in BC-16B	
JUSTIFICATION/	Improve riparian habitat.	\mathbf{H}
BENEFIT		
COMMENTS:	Right-of-way acquisition is needed. Also, this section of Beaver Creek is located within DD #6.	
	Need to work with drainage district 6.	
LOCATION:	NW1/4, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	
ESTIMATED COST:	Upto \$500K dependent on number of participants.	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE S				
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale		
HYDROLOGY	Low benefit to hydrology.		Reach		
SEDIMENT REGIME	Minor improvements to sediment transport.		Reach		
LWD FUNCTION	Could improve in the short term if LWD is installed otherwise incremental improvements would occur as plantings mature.		Reach		
CHANNEL FUNCTION	Removing reed canary grass, planting vegetation, and adding LWD will improve natural channel function.		Reach		
FLOODPLAIN	Acquisitions could significantly increase floodplain		Reach		
FUNCTION	functions.				
GROUNDWATER RECHARGE	No Change				
WATER QUALITY	Significant improvement immediately and long term, due to maturing of vegetation. Will also improve water temperature.		Reach		
RIPARIAN CONNECTIVITY	Will increase riparian connectivity. Homeowner lawn's currently fragment riparian connectivity.		Reach		
FISH MIGRATION					
ANTHROPOGENIC EROSION					
OTHERS:	Several life stages of coho and cutthroat are known to use Beaver Creek. Use by other salmonid species is unknown.		Reach		

HAZARDS TO LIFE, LIMB, AND PROPERTY			SCOR	E: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	SOLUTION EFFICACY SCORE:: H				H	
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source – Landuse	Varies from short term to long term depending on landowner willingness, type of restoration application, available funds.	Long term	Landowner willingness, funding, permits,	Reach	Up to \$500K – to mitgate high cost, project could be phased over time.

BC-16B

GENERAL INFORMATION

RECOMMENDATION	Beaver Creek Acquisition and/or easement, and restoration.(Restoration Component)	SCORE
NAME:		
RECOMMENDATION	Habitat—The stream corridor from the confluence of Boise Creek and Beaver Creek to 288th Ave SE	
PROBLEMS	is mostly devoid of any stream side vegetation and is covered with a lot of reed-canary grass.(Source:	
ADDRESSED:	Habitat Assessment)	
PROJECT	Relocate Beaver Creek outside of road ROW.	
DESCRIPTION:		
JUSTIFICATION/	Improve riparian habitat.	H
BENEFIT		
COMMENTS:	Right-of-way acquisition is needed. Also, this section of Beaver Creek is located within DD #6.	
	Need to work with drainage district 6.	
LOCATION:	NW1/4, S31, T20N, R7E (2000 Thomas Bros. Map pg. 838-G2)	
ESTIMATED COST:	Upto \$500K dependent on number of participants.	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	Low benefit to hydrology.		Reach	
SEDIMENT REGIME	Minor improvements to sediment transport.		Reach	
LWD FUNCTION	Could improve in the short term if LWD is installed otherwise incremental improvements would occur as plantings mature.		Reach	
CHANNEL FUNCTION	Removing reed canary grass, planting vegetation, and adding LWD will improve natural channel function.		Reach	
FLOODPLAIN	Acquisitions could significantly increase floodplain		Reach	
FUNCTION	functions.			
GROUNDWATER RECHARGE	No Change			
WATER QUALITY	Significant improvement immediately and long term, due to maturing of vegetation. Will also improve water temperature.		Reach	
RIPARIAN CONNECTIVITY	Will increase riparian connectivity. Homeowner lawn's currently fragment riparian connectivity.		Reach	
FISH MIGRATION	-			
ANTHROPOGENIC EROSION				
OTHERS:	Several life stages of coho and cutthroat are known to use Beaver Creek. Use by other salmonid species is unknown.		Reach	

Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access) Safety/Threat (Describe who or what is at risk if no action is taken.) Safety/Threat (Describe who or what is at risk if no action is taken.) Safety/Threat (Describe who or what is at risk if no action is taken.) Safety/Threat (Describe who or what is at risk if no action is taken.) Safety/Threat (Describe who or what is at risk if no action is taken.) Safety/Threat (Describe who or what is at risk if no action is taken.) Scale (Describe who or what is at risk if no action is taken.)	HAZARDS TO L	SCOR	E: N/A			
	(List the hazard type, e.g. flooding, landslide,	(Describe who or what is at	(How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly	(Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites	(Describe the frequency	Scale

SOLUTION	EFFICACY				SCORE:	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate. 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source – Landuse	Varies from short term to long term depending on landowner willingness, type of restoration application, available funds.	Long term	Landowner willingness, funding, permits,	Reach	Up to \$500K – to mitgate high cost, project could be phased over time.

BC-17 (Will be addressed in BC2)

GENERAL INFORMATION

RECOMMENDATION	Golf Course Tributary Improve Fish Passage	SCORE
NAME:		
RECOMMENDATION	Habitat—The culvert that conveys this right bank tributary (Proposed to be named #10.0058) into	
PROBLEMS	Boise Creek within the golf course is partially plugged and restricts fish passage. This culvert is	
ADDRESSED:	thought to have an adverse grade. (Source: Habitat Assessment)	
PROJECT	Replace the existing culvert with an open channel.	
DESCRIPTION:		
JUSTIFICATION/	Improve fish passage.	
BENEFIT		N
COMMENTS:	There is limited fish habitat upstream of this culvert. BC2 will resolve this issue if implemented. There is a water quality problem upstream due to heavy sedimentation. Drainage services has identified the source of upstream water quality problems to a WSDOT waste site. The extent of other fish passage blockages upstream from the golf course needs to investigated. There may be an opportunity to daylight this tributay to the wetland on the North side of HWY 410.	M
LOCATION:	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 808-H7)	
ESTIMATED COST:	<\$75K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ECOLOGICAL SIGNIFICANCE		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Slight improvement because of being re-vegetated.		Reach
SEDIMENT REGIME			
LWD FUNCTION			
CHANNEL FUNCTION	Will provide an open channel.		Reach
FLOODPLAIN FUNCTION	Will provide a floodplain.		Reach
GROUNDWATER RECHARGE			
WATER QUALITY			
RIPARIAN CONNECTIVITY	Will restore riparian corridor.		Reach
FISH MIGRATION	Will eliminate blockages.		Reach
ANTHROPOGENIC EROSION			
OTHERS:			

HAZARDS TO L	SCOR	E: N/A			
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

Does the recommendation address the problem? Does the recommendation address the problem source or treat a symptom? Time frame for problem resolution (e.g. immediate. lyr. etc.) What is the longevity of the recommendation? Recommendation Readiness (e.g. need further study, ready for feasibility, ready to build. Also, include what else is needed.) What are the benefits on a Geographic Scale? Sile/Reach/Watershed	SOLUTION	EFFICACY				SCORE:	M
	the mendati ss the em?	s the ommendati ress the olem source reat a ptom?	fram em ntion	is the vity of the imendation	mendati ess further study assibility, res lso, include led.)	are the S on a aphic	Cost
Yes Source Immediate Long term Need field Reach >\$200K	Yes	Source	Immediate	Long term	Need field	Reach	>\$200K

GENERAL INFORMATION

RECOMMENDATION	Historic Channel Mapping	SCORE
NAME:		
RECOMMENDATION	Lack of historic channel information.	
PROBLEMS		
ADDRESSED:		
PROJECT	Map historic channel alignment throughout the watershed, including wetlands, overflow channel, and	
DESCRIPTION:	any pertinant hydrolic features.	
JUSTIFICATION/	Understanding the natural history of Boise Creek.	H
BENEFIT		
COMMENTS:	Use GLO land surveys, other archival sources. Corrdinate with WLRD and UW staff with expertise	
	in this area. (Karen Bergeron, Katie Gellnbeck; Brian Collins and Amir Sheikh at UW.)	
LOCATION:	Entire watershed.	
ESTIMATED COST:	<\$20K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	Will increase County knowledge.			
SEDIMENT REGIME	Will increase County knowledge.		Watershed	
LWD FUNCTION	Will increase County knowledge.		Watershed	
CHANNEL FUNCTION	Will increase County knowledge.		Watershed	
FLOODPLAIN FUNCTION	Will increase County knowledge.		Watershed	
GROUNDWATER RECHARGE	Will increase County knowledge.		Watershed	
WATER QUALITY	Will increase County knowledge.		Watershed	
RIPARIAN CONNECTIVITY	Will increase County knowledge.		Watershed	
FISH MIGRATION	Will increase County knowledge.		Watershed	
ANTHROPOGENIC EROSION	Will increase County knowledge.		Watershed	
OTHERS:			Watershed	

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY				
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None		-	_		

SOLUTION	EFFICACY				SCORE:	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Ongoing	Ongoing	Funding and coordination	Watershed	<\$20K

GENERAL INFORMATION

RECOMMENDATION	Flood Calibration	SCORE
NAME:		
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, floodplain/channel processesBoise Creek has been channelized & constrained by the agricultural community over many decades. Flood calibration would help determine where flooding occurs.	
PROJECT DESCRIPTION:	Set up contract with helicopter to take pictures when the Creek floods. Set up a team in advance to take ground photos, and mark locations. A 2-year event will trigger this action.	**
JUSTIFICATION/ BENEFIT	To monitor and model, to see flooding on the ground, get sense of historic channels.	Н
COMMENTS:	Place under other programmatic recommendations in the report.	
LOCATION:	Entire Boise Creek.	
ESTIMATED COST:	<\$20K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICANCE (THIS STUDY WILL INCREASE COUNTY KNOWLEDGE AND UNDERSTANDING OF HABITAT, FLOODPLAIN AND CHANNEL PROCESSES TO ENABLE THE COUNTY TO IDENTIFY AND DESIGN BETTER PROJECTS FOR THIS WATERSHED.) SCORE: H

Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Will increase County knowledge.		
SEDIMENT REGIME			Watershed
LWD FUNCTION			Watershed
CHANNEL FUNCTION	Will increase County knowledge.		Watershed
FLOODPLAIN FUNCTION	Will increase County knowledge.		Watershed
GROUNDWATER RECHARGE			Watershed
WATER QUALITY			Watershed
RIPARIAN CONNECTIVITY			Watershed
FISH MIGRATION			Watershed
ANTHROPOGENIC EROSION			Watershed
OTHERS:			Watershed

HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION EFFICACY SCORE:: H						Н
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes – Not a problem but provides important information.	Attempting to get to the source.	Periodic during major flooding events.	Indefinite	Obtain funding and setup contract, personnel, and scope.	Watershed.	<\$20 K

GENERAL INFORMATION

RECOMMENDATION	Boise Creek Mouth Relocation	SCORE
NAME:		
RECOMMENDATION	Habitat, floodplain/channel processes -Straightened stream channel, no rearing or spawning habitat.	
PROBLEMS	Decrease water velocities, improve natural channel function.	
ADDRESSED:		
PROJECT	Boise Creek mouth relocation (below Mud Mountain Rd crossing, downstream 500 ft -USGS gage	
DESCRIPTION:	down to the mouth). Increase stream length (possibly add 1000 + feet). Oversteep, straight, no	
	spawning or rearing, just transport. Provide refuge area from White. There's already County	
	investment in property and potential partnering (TPU). County owns both sides of Boise Creek. Offer	
	cold water refuge for White.	**
JUSTIFICATION/	High priority from WRIA 10 EDT report. Create 1500 feet of spawning/rearing habitat. Remove dike	H
BENEFIT	and make more natural	
COMMENTS:	Do not relocate mouth to be too close to Enumclaw sewer outfall (on downstream side of 410 bridge).	
	Needs feasibility for SRFB, detailed design, and construction	
LOCATION:	Mouth upstream approx. 500 ft to USGS gage. RM 0 to RM 0.1	
ESTIMATED COST:	Feasibility < \$15K	
	Design and construction unknown at this time will be determined after feasibility. Ballpark cost. >	
	\$750 K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	No Change – Just altering the location of the mouth.		Reach	
SEDIMENT REGIME	Longer channel will slow sediment transport within this reach.		Reach	
LWD FUNCTION	Currently LWD is notpresent, the project will add significant amounts of LWD. Also, as planting matures LWD will be recruited.		Reach	
CHANNEL FUNCTION	Channel function will significantly improve. This project will turn the mouth of Boise into a longer channel, which will result in slower sediment transport and slower velocities, and allow for a more natural channel function in this reach. Opportunity to create spawning habitat within this reach, and offer cold water refuge for the White River.		Reach	
FLOODPLAIN FUNCTION	Currently the stream banks serves as dikes and there is no floodplain function. The project would restore this function and allow a floodplain to develop.		Reach	
GROUNDWATER RECHARGE	No Change		Reach	
WATER QUALITY	Minor because it's at the mouth of the creek.		Reach	
RIPARIAN CONNECTIVITY	This function will significantly increase because of longer stream length. Opportunities, to increase the vegetative species diversity within the riparian corridor.		Reach	
FISH MIGRATION	Spring and fall chinook, coho, chum, and steelhead heavily use this stream. Current velocities and lack of pools make it more difficult for fish migration. This project will improve migration through pool creation and slower velocities, and better riparian habitat.		Reach	
ANTHROPOGENIC EROSION	No Change		Reach	
OTHERS:		Recent pipeline work done TPU on the White River could cause the mouth of Boise Creek to be perched during a high flood event. This project would relocate the mouth of Boise Creek to prevent this from happening.	Site - Watershed	

HAZARDS TO L	HAZARDS TO LIFE, LIMB, AND PROPERTY			SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None					

SOLUTION	N EFFICACY				SCORE:	Н
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate for most ecological function and increased benefits to be gained as plantings mature.	Permanent	Property is owned by the County, feasibility study is under way, current site conditions are prime, grants will be written for 2004 for design and permit funding. If funded design would start in 2005.	Site – Reach, and watershed for fish migration.	Feasibility < \$15K Design and construction unknown at this time will be determined after feasibility. Ballpark cost. > \$750 K

GENERAL INFORMATION

RECOMMENDATION NAME:	Acquistion & LWD placement within reach of Boise Creek that traverses the mudflow cut	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Habitat, Channel processes/functions—The channel within this reach is undergoing ongoing erosion problems where the stream has been relocated several decades ago into a steep-walled ravine where it is actively incising through mud flow deposits where the channel descends from the plateau down to the White River. The riparian habitat within this reach is in relatively good condition due to an abundance of mature trees adjacent to the channel. Instream habitat is in poor condition, however, because of lack of LWD, overhanging cover, lack of hydraulic diversity, and high energy flows.	
PROJECT DESCRIPTION:	Addition of LWD will help stabilize the channel, and reduce erosion. It will also increase instream habitat complexity and hydraulic refugia for salmonids. This project includes systematic consideration of acquisition opportunities; addition of LWD pieces and/or log jams to trap sediment and decrease velocities in locations where they will not pose risk to adjacent properties and infrastructure.	M
JUSTIFICATION/ BENEFIT	Reduce energy of flows; improve salmonid spawning and rearing habitat and and restore natural channel functions. Addition of LWD will increase local deposition of gravels, reduce the sediment transport rate.	
COMMENTS:	Some of the corridor along the right bank is already in public ownership in the form of a "rails-to-trails" corridor, and there is one good access point on a public right-of-way currently occupied by a sturdy, but no longer actively used bridge. Needs scoping for feasibility, and ongoing consideration of acquisition opportunities as they arise.	
LOCATION:	RM 0.1 to RM 1.1.	
ESTIMATED COST:	Cost unknown, but could exceed \$100,000.	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	9	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	No Change			
SEDIMENT REGIME	Will improve fine and course sediment trapping, sorting, and transport.	Will slow the rate of channel incision.	Reach	
LWD FUNCTION	Will be significantly improved, currently very little LWD is present.		Reach	
CHANNEL FUNCTION	Will improve the sediment regime, LWD recruitment and retention (as placed LWD will retain some naturally recruited pieces), will reduce high-energy flows.	Will slow the rate of channel incision and improve LWD recruitment and sediment storage.	Reach	
FLOODPLAIN FUNCTION	No Change		Reach	
GROUNDWATER RECHARGE	No Change		Reach	
WATER QUALITY	Improvements due to a reduction in erosion and channel incision.		Reach	
RIPARIAN CONNECTIVITY	Improvements in riparian species diversity by planting conifers and natural colonization on trapped sediments of native overhanging vegetation along the channel margins.		Reach	
FISH MIGRATION	Reducing high-energy flows will significantly improve fish migration by providing areas of hydraulic refugia within this reach.		Reach – Watershed	
ANTHROPOGENIC EROSION	Reducing the high-energy flow will significantly reduce erosion as this stream cuts through the Osceola mud flow to enter the White River.		Reach	
OTHERS:				

HAZARDS TO LIFE, I	HAZARDS TO LIFE, LIMB, AND PROPERTY				SCORE: L	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale	
Unknown – possible landslide.	If no action is taken, the channel will continue to incise through unstable mudflow				Site	
	deposits.					

SOLUTION	SOLUTION EFFICACY SCORE:: M					
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Symptom – because the channel was altered when HWY 410 was built.	Immediate	Long term for acquisition, 20 to 50 years for LWD.	Project needs more scoping to determine feasibility and funding needs.	Reach, with watershed benefits for fish passage.	\$100,000?

GENERAL INFORMATION

RECOMMENDATION	Agriculture & Stewardship Coordination	SCORE
NAME:		
RECOMMENDATION	Program coordination and reduce conflict with agricultural program and habitat programs.	
PROBLEMS		
ADDRESSED:		
PROJECT	Program recommendation - connect with APD and FPD program to get list of problem areas and	
DESCRIPTION:	priorities. Identify what lands can be used for farming, which for ecological restoration. Basin wide	
	acquisition/ land trade strategy for stream restoration and farming.	H
JUSTIFICATION/		
BENEFIT		
COMMENTS:	Place under other programmatic recommendations in the report.	
LOCATION:	Basin wide	
ESTIMATED COST:	Staff Time	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	S	SCORE: H
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY			
SEDIMENT REGIME			
LWD FUNCTION			
CHANNEL FUNCTION			
FLOODPLAIN			
FUNCTION			
GROUNDWATER			
RECHARGE			
WATER QUALITY			
RIPARIAN CONNECTIVITY			
FISH MIGRATION			
ANTHROPOGENIC EROSION			
OTHERS:	(Coordination efforts will lead to improved stewardship, protection, and a better understanding of conflicts between agriculture and habitat programs so conflicts can be reduced.)		Watershed

HAZARDS TO LIFE, 1	HAZARDS TO LIFE, LIMB, AND PROPERTY				E: N/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
Unknown – possible					
landslide.					

SOLUTION	EFFICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	Immediate to long term to engender better cooperation and understanding.	Long term	There is a known willingness to coordinate.	watershed	Staff Time

GENERAL INFORMATION

RECOMMENDATION	Channel Relocation Around Water Fall Fish Passage Barrier.	SCORE
NAME:		SCORE
RECOMMENDATION	Blocks anadromous fish usage of upper basin.	
PROBLEMS		
ADDRESSED:		
PROJECT	This is a feasibility analysis to determine if any potential exsist for rerouting the stream around the	
DESCRIPTION:	exsisting impassable waterfall. Based on historical fish access.	
JUSTIFICATION/	Makes accessible approximately 1.5 miles of high quality anadromous fish habitat in the ravine, south	
BENEFIT	of HWY 410 (up to Mill Pond) Increase nutrient base - fish carcasses, and reduces energy in system.	
COMMENTS:	Needs ground truthing by geologist and geomorphologist. In the feasibility study, detailed design,	
	and construction will be evaluated. Based on analysis of the existing topography and a historic U.S.	
	Land Survey map from the late 1800s, Boise Creek may have originally flowed in the general	
	location of the existing alignment of SR-410 between the Enumclaw Golf Course and the	
	Weyerhauser Mill, upstream from the current highway crossing. Boise Creek was probably relocated	
	to its current alignment between RM 4.3 and RM 4.6 when the Northern Pacific Railroad and the	
	roadway that preceded SR-410 were built built before the turn of the last centuiry. Before these	
	potentual alterations, it was not only likely, but highly probable that anadromous fish ascended	н
	several miles upstream from the current passage barrier posed by the waterfall upstream from the	***
	Enumclaw Golf Course. The purpose of this project would be to realign Boise Creek into a corridor	
	within and adjacent to the forest on the south side of SR-410 and route it into the Golf Course north	
	of its current alignment downstream from the waterfall. (bypass waterfall). At present, the 20 foot	
	high drop below the waterfall is a total fish passage barrier for all salmonid species. Moreover, the	
	reach between the waterfall and the logjam is a bedrock chute that contains little LWD, gravel or	
	other sources of instream habitat complexity that could enable this channel segment to serve as either	
	spawning or rearing habitat. By realigning the stream away from the waterfall, this reach could be	
	lengthened, and the gradient could be reduced, thereby dampening flow velocities during flood	
	events. The the channel could be filled with gravel and LWD to make it more hospitable for	
	salmonids and increase temporary sediment storage areas far beyond existing levels, thereby reducing	
7.0.01.001	sedimentation in the golf course reach downstream.	
LOCATION:	RM 4.3 to 4.6	
ESTIMATED COST:	Feasibility <50K	
	Design & Construction >250K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	Minor		Reach
SEDIMENT REGIME	This project will significantly alter sediment regime by creating longer reach and reducing the energy in system by relocating the channel.	This project could help protect the golf course from flooding by decreasing the volumes of coarse sediment that at present are readily transported through the bedrock reach upstream from the golf course, over the waterfall and into the channelized and confined channel of Boise Creek within the golf course. Sediment aggradation of the main channel within the golf course reach is a major cause for overbank flooding during large storms, and has at times necessitated removal of large volumes of gravel from areas in play and the channel itself.	Reach
LWD FUNCTION	LWD would be added to a longer channel system.		Reach
CHANNEL FUNCTION	Significantly altered by creating a longer channel.		Reach
FLOODPLAIN FUNCTION	Rerouting the stream would increase floodplain function because the canyon in which the stream is currently located does not allow the stream to have sufficient floodplain functions.		Reach
GROUNDWATER RECHARGE	No Change		Reach
WATER QUALITY	No Change		Reach
RIPARIAN CONNECTIVITY	Will increase riparian cover if stream is rerouted.		Reach

FISH MIGRATION	Significant improvement if stream is to be rerouted. This would increase spawning habitat for anadromous fish for approximately 1 mile (longer with BC10)	Reach
ANTHROPOGENIC EROSION	No Change	
OTHERS:		

HAZARDS TO LIFE, LIMB, AND PROPERTY SCORE: N/A					N/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Thre at (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
N/A.					

SOLUTION EFF	ICACY				SCORE::	Н
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, tready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes – not really a problem this is a creative solution.	Symptom? Need to determine the location of Boise Creek prior to the construction of HWY 410.	Unknown- since it is a creative approach.	Long term	Project needs to be coordinated with electric utilities and WSDOT. Feasibility, design, engineering, funding, ground truthing by geologist and geomorphologist.	Reach	Feasibility < \$50K Design & Construction > \$500K

GENERAL INFORMATION

RECOMMENDATION	Foothills Rails to Trails Revegetation	SCORE
NAME:		
RECOMMENDATION	Opportunity for public outreach and education; poor water quality	
PROBLEMS		
ADDRESSED:		
PROJECT	Coordinate with new entities developing the Enumclaw rails to trails project that parallels SR-410	
DESCRIPTION:	within reach RCHRS 100 (Foothills Rails to Trails). This project offers opprotunities to install	
	interpretative signs,, enhance the riparian buffer along the right bank of Boise Creek, via invasive	
	weed removal and conifer underplanting. A riparian corridor along a tributary that conveys flows	
	from upstream and within the City of Enumclaw into Boise Creek along SR-410 could also be	TT
	revegetated.	H
JUSTIFICATION/	Water quality and riparian habitat improvement; inform and involve trail users about restoration	
BENEFIT	actions taking place throughout the watershed.	
COMMENTS:	A publically owned abandoned bridge upstream of Mud Mountain Rd would be a good place to post	
	an interpretive sign.	
LOCATION:	Rails to trails ROW adjacent to SR410 by RM 0.1 to approximately RM 1.1 on the mainstem	
ESTIMATED COST:	\$15,000 for plants and signage. Additional funds may be needed for ongoing weed removal,	
	watering and maintenance.	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	\$	SCORE: H
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	No Change		
SEDIMENT REGIME	No Change		
LWD FUNCTION	Improve via planting riparian vegetation that could eventually become a source of LWD.		
CHANNEL FUNCTION	No Change		
FLOODPLAIN FUNCTION	No Change		
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Minor improvement to stream temperature.		Site
RIPARIAN CONNECTIVITY	Improved connectivity by filling in existing gaps in riparian vegetation and removal of invasive plant species.		Site
FISH MIGRATION	No Change		
ANTHROPOGENIC EROSION	No Change		
OTHERS:	Significant opportunity for public outreach and education.		Watershed

HAZARDS TO LIFE, LIMB, AND PROPERTY SCORE				E: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
N/A					

SOLUTION EFF	ICACY				SCORE::	H
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., neef further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes – address opportunity	Source	On going.	Long term	Project needs to be scoped, scheduled, and funded. This is an opportunity project.	Watershed	<\$20 K

GENERAL INFORMATION

RECOMMENDATION	Enumclaw nonpoint public outreach	SCORE
NAME:		
RECOMMENDATION	Unmet need for public outreach and education about nonpoint pollution sources and solutions.	
PROBLEMS		
ADDRESSED:		
PROJECT	Work with City of Enumclaw and its residents to increase publicawareness of nonpoint pollution;	
DESCRIPTION:	develop citizen-based strategies and projects to reduce nonpoint source pollution. These projects	
	could include revegetation to increase stream shading, workshops on nature-scaping practices, storm-	
	drain stencilling, increasing participation in the Salmon-Watcher Program, etc	\mathbf{H}
JUSTIFICATION/BEN	Improve water quality through revegetation and outreach.	
EFIT		
COMMENTS:	Additional reconnaissance should be conducted to determine if salmonids use the unnamed ditched	
	tribributaries in Enumclaw, including SR-410 Creek.	
LOCATION:	All drainage systems draining from the City of Enumclaw into Boise Creek.	
ESTIMATED COST:	Staff Time	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICATION OF THE PROPERTY OF TH	ECOLOGICAL SIGNIFICANCE		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY	No Change		
SEDIMENT REGIME	Revegetation will help stabilize unstable stream banks.		Reach.
LWD FUNCTION	No Change		
CHANNEL FUNCTION	Stream banks will be stabilized in some areas.		Reach.
FLOODPLAIN FUNCTION	No Change		
GROUNDWATER RECHARGE	No Change		
WATER QUALITY	Improved water quality through nonpoint pollution awareness, revegetation, storm drain stenciling and other public outreach actions. Implementation of citizen-based nonpoint source abatement projects will help reduce non-point source pollution and shade the channelized streams within and near Enumclaw, thereby reducing stream temperatures.	Water quality will be protected.	Watershed
RIPARIAN CONNECTIVITY	Revegetation will restore riparian connectivity in some areas.	Water quality and fish habitat will be protected.	Reach.
FISH MIGRATION	Fish migration will be improved by reducing pollution and water temperatures.	Increased involvement in the Salmon-Watch program will protect migrating and rearing salmonids.	Reach.
ANTHROPOGENIC EROSION	Erosion will be reduced in some areas by revegetating denuded stream channel segments.		Reach.
OTHERS:	Will require local government coordination, cooperation, education, and outreach.		Watershed

HAZARDS TO LIFE, I	HAZARDS TO LIFE, LIMB, AND PROPERTY			SCORE: N/A	
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
N/A	N/A	High—303(d) water quality impairment could trigger expensive nonpoint source pollution abatement requirements.			

SOLUTION	SOLUTION EFFICACY SCORE:: H				H	
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr, etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes	Source	On going	Long	Currently under way,	Depending on the actions implemented,	Staff
			term	however for future work	the benefits will range from the reach to	time
				more funding is needed.	the watershed scales.	

GENERAL INFORMATION

RECOMMENDATION	Upper Boise Creek Habitat Reconnection and Passage Improvements.	SCORE
NAME:		
RECOMMENDATION	This is an opportunity to create resident-fish passage above the mill (logging roads, culverts), and	
PROBLEMS	general Instream riparian and wetland habitat improvement, and enhancements.	
ADDRESSED:		
PROJECT	Need upper habitat reconnaissance and potential enhancement recommendations needs to be	
DESCRIPTION:	developed.	
JUSTIFICATION/	Improved fish passage, and habitat.	Н
BENEFIT		п
COMMENTS:	Need permission from property owner to recon upper watershed. Recon could identify additional	
	projects. Need to investigate whether there was a historical fish passage barrier or not.	
LOCATION:	Upstream from Mill Pond	
ESTIMATED COST:	Feasibility <\$50K	
	Design and Construction Unknown	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	ANCE	;	SCORE: H	
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale	
HYDROLOGY	No Change			
SEDIMENT REGIME	May change within Mill pond area.		Reach	
LWD FUNCTION	Natural transport through system will be reestablished.		Reach	
CHANNEL FUNCTION	Restore some natural sediment transport functions.		Reach	
FLOODPLAIN FUNCTION	May restore some natural floodplain processes and functions.		Reach	
GROUNDWATER RECHARGE	Unknown			
WATER QUALITY	Unknown			
RIPARIAN CONNECTIVITY	May restore some riparian zones currently disconnected because of stream routing underneath the Mill.		Reach	
FISH MIGRATION	Improve resident fish passage and genetic attributes. (Assumes no historic barrier.)		Reach	
ANTHROPOGENIC EROSION	Unknown			
OTHERS:	Will improve County knowledge and understanding of the upper watershed. Likely to generate additional project and acquisition opportunities.		Reach	

HAZARDS TO LIFE, LIMB, AND PROPERTY				SCOR	E: N/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
N		1 1 77			

SOLUTION EFF	ICACY				SCORE::	Н
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a symptom?	Time frame for problem resolution (e.g. immediate, 1yr. etc.)	What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost
Yes – opportunity for proactive rather than reactive driven projects.	Source	Short Term	Project is short term. Potential benefits and identified project could be long term depending on time required to develop and implement.	Needs coordination with Weyerhaeuser and Hancock timber. Also needs funding.	Reach	Feasibility <\$50K Design and Construction Unknown

GENERAL INFORMATION

RECOMMENDATION NAME:	Water quality remediation on trib #10.0058 (Note: Trib number needs to verified / assigned by DNR)	SCORE
RECOMMENDATION PROBLEMS ADDRESSED:	Sediment / silt layeden runoff from unidentified source. (King County drainage investigation has preliminaryly traced this problem to an anbandoned WSDOT waste site. (Source: Habitat Assessment)	
PROJECT DESCRIPTION:	Investigate and improve the water quality in this tributary.	***
JUSTIFICATION/ BENEFIT	Water quality improvement will improve fish passage and prevent impacts to redds	H
COMMENTS:	This project will be done inconjustion with BC-2 and BC-17. Refer to drainage complaint.	
LOCATION:	E1/2, S30, T20N, R7E Enumclaw Golf Course (2000 Thomas Bros. Map pg. 808-H7)	
ESTIMATED COST:	<\$75K	

PLANNING LEVEL CRITERIA

ECOLOGICAL SIGNIFICA	SCORE: H		
Ecological Processes/Indicators (Add additional attribute to this list if indices or processes are missing.)	Improve (Describe how or what ecological processes will be improved.)	Protect (Describe how or what ecological processes will be protected.)	Scale
HYDROLOGY			
SEDIMENT REGIME	Fine sediment loading of the tributary and downstream areas in the mainstem of Boise Creek would be reduced.	This project would reduce unnaturally high inputs of fine sediment into the prime spawning reach of Boise Creek.	Multiple reaches.
LWD FUNCTION	LWD could be added to the vegetated pond to provide cover and hydraulic refuge for overwintering juvenile salmonids.	No change. Revegetating this stream corridor with overhanging vegetation would not increase LWD loading in mainstem Boise Creek.	Reach.
CHANNEL FUNCTION	At present, the channel of this tributary is extremely dysfunctional because it has been ditched and encased in a culvert through much of its length through the golf course. Moreover, the downstream culverted end of the channel is at an inverse grade, causing the channel trap fish under certain flow conditions. Therefore, channel stability as well as connectivity with the mainstem would be improved.	Channel functions are currently degraded, but the newly restored channel would have to be protected in order to remain functional.	Reach.
FLOODPLAIN FUNCTION	The channel was likely artificially dredged in a historic wetland and floodplain area where Boise Creek frequently overbanked into its floodplain. Depending on the channel design, modest floodplain functions could be improved at the mouth of the stream, in the vicinity of the vegetated pond, and along the banks of this tributary.	Floodplain functions are currently degraded, and restored floodplain along the mouth of the tributary and its channel upstream would have to be protected in order for these functions to remain functional.	Reach.
GROUNDWATER RECHARGE	Some improvement in groundwater recharge could be expected as a result of day-lighting the currently culverted segments of this stream.		
WATER QUALITY	Water quality would be improved by addressing upstream source problems, and via biofiltration within the vegetated pond and revegetated riparian buffer.		
RIPARIAN	Riparian connectivity would be greatly		
CONNECTIVITY FISH MIGRATION	improved. A fish passage problem would be solved, and fish would be able to freely move in and out of the day-lighted channel.		
ANTHROPOGENIC EROSION	Scouring and slumping of the oversteepend banks of the ditch would decrease.		
OTHERS:	Fish habitat, including flood refugia and over- wintering habitat would be expanded and improved.		

HAZARDS TO L	IFE, LIMB, AND PR	OPERTY		SCORE: N	/A
Hazard Type (List the hazard type, e.g. flooding, landslide, emergency access)	Safety/Threat (Describe who or what is at risk if no action is taken.)	Urgency (How quickly do we need to respond to this hazard to prevent a problem from growing worse and requiring an increasingly costly solution?)	Responsibility (Does the problem relate to a County facility that King County has a legal commitment to maintain? Hazards associated with County facilities should be a higher priority than sites where no such commitment exists.)	Frequency (Describe the frequency of the hazard.)	Scale
None.	None.	Moderate.	King County and Ecology are responsible for investigating and requiring solutions to address the source of sedimentation via King County's NPDES permit. The City of Enumclaw owns the golf course, and would have to be willing to permit implementation of this project.	None.	Reach.

SOLUTION EFFICACY						SCORE:: H	
Does the recommendation address the problem?	Does the recommendation address the problem source or treat a		What is the longevity of the recommendation?	Recommendation Readiness (e.g., need further study, ready for feasibility, ready to build. Also, include what else is needed.)	What are the benefits on a Geographic Scale?	Cost	
Yes.	Sources.	Five years.	The restored channel would function in perpetuity once it is restored, although some sediment management may be needed depending on the extent to which upstream sediment sources could be successfully abated.	Ready for feasibility.		<\$75K	